Department of Toxic Substances Control

Edwin F. Lowry, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Gray Davis
Governor

June 10, 2002

Mr. Eddie Fisher, President
La Barron Investments
2020 East Orangethorpe
Fullerton, California 92831

CERTIFIED MAIL #7000 1670 0007 2729 5832

ENFORCEMENT ORDER FOR LA BARRON INVESTMENTS, FORMERLY TRENT TUBE, 2100 EAST ORANGETHORPE AVENUE, FULLERTON, CALIFORNIA 92831, EPA ID CAD0008325110

IN THE MATTER OF: HWCA PT-01/02-009

Dear Mr. Fisher:

Enclosed please find an Enforcement Order for Corrective Action and related documents concerning requirements for Corrective Action when there has been a release of hazardous waste or hazardous waste constituents into the environment from a hazardous waste facility.

As indicated in the enclosures, you have a right to a hearing. A WRITTEN REQUEST FOR A HEARING MUST BE DELIVERED TO THE DEPARTMENT OF TOXIC SUBSTANCES CONTROL OR POSTMARKED WITHIN 20 DAYS OF THE DATE OF THIS LETTER OR YOU WILL WAIVE YOUR RIGHT TO A HEARING.

Whether or not you choose to request a hearing, you are encouraged to explore the possibility of settlement by contacting Ms. Leona Winner, at the address listed above, or you may call her at (916) 255-6679.

Sincerely,

Mohinder S. Sandhu, P.E., Chief
Standardized Permits &
Corrective Action Branch

Enclosure(s)

cc: See next page.

cc: Mr. Maneck Chichagar (w/enclosures)
Santa Ana Regional Water Quality Control Board
3737 Main Street Suite 500
Riverside, California 92501-6288

Mr. James Grace (w/enclosures)
Office of Legal Counsel
Department of Toxic Substances Control
1001 I Street
Sacramento, California 95812-0806

Ms. Florence Gharibian (w/o enclosures)
Department of Toxic Substances Control
1011 North Grandview Avenue
Glendale, California 91201

Ms. John McCarroll (w/o enclosures)
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street (H-3-2)
San Francisco, California 94105

Ms. Leona Winner (w/o enclosures)
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of:		
		Docket No. HWCA PT-01/02-009
Facility: 2100 East Orangethorpe Avenue Fullerton, CA 92831 CAD 008 325 110	)	ENFORCEMENT ORDER FOR CORRECTIVE ACTION
Owner: Mr. Eddie Fisher, President La Barron Investments 2020 East Orangethorpe Fullerton, CA 92831	)	Health and Safety Code Section 25187

INTRODUCTION

1.1. Parties. The State Department of Toxic Substances Control (DTSC or Department) issues this Enforcement Order for Corrective Action (Order) to Mr. Eddie Fisher, President of La Barron Investments (Respondent).

1.2. Permitting Status. Respondent is the owner of a facility located at 2100 East Orangethorpe Avenue in Fullerton, Orange County (Facility) that was previously used for handling hazardous waste. Respondent's predecessor, Trent Tube Company, a division of Crucible Materials Corporation, engaged in the management of hazardous waste pursuant to an interim status document issued on April 6, 1981, by the Department of Health Services, which was DTSC's predecessor agency. Trent Tube Company's authorization to operate the Facility as a hazardous waste facility ended on April 16, 1985. The Respondent subsequently purchased the Facility and assumes all environmental liabilities and responsibilities under applicable federal and state laws.

1.3. Jurisdiction. Jurisdiction exists pursuant to Health and Safety Code section 25187, which authorizes DTSC to issue an order to require corrective action when DTSC determines that there is or has been a release of hazardous waste or hazardous waste constituents into the environment from a hazardous waste facility.

1.4. Definition of Terms. The terms used in this Order are as defined in the California Code of Regulations, title 22, section 66260.10, except as otherwise provided.

1.5. Attachments. All attachments to this Order are incorporated herein by this reference.

FINDINGS OF FACT

2.1. On May 11, 2000, DTSC completed a RCRA Facility Assessment (RFA). The RFA identifies four solid waste management units (SWMUs) and one area of concern (AOC) that either have released or may release hazardous waste or hazardous waste constituents into the environment. The SWMUs and AOCs are as follows:

SWMU #1: Drum Storage Areas
SWMU #2: Waste Oil Tank
SWMU #3: Spent Pickle Liquor Tanks
SWMU #4: Degreasing Pit
AOC #1: Area from the rear (south side) of the plant building to the property boundary.

2.2. Based on the RFA for the former Trent Tube Facility, DTSC concludes that further investigation is needed to determine the nature and extent of contamination in the four SWMUs and one AOC listed above.

2.3. Hazardous wastes or hazardous waste constituents have migrated or may migrate from the Facility into the environment through the soil and groundwater.

2.4. The hazardous waste and hazardous waste constituents of concern at the Facility include, but are not limited to: metals, volatile organic compounds, semi-volatile organic compounds in soil and groundwater.

2.5. The Facility is located in a light industrial/ commercial area. There are no residences bordering the property. No endangered or threatened plants or animals are known to exist within one half mile of the facility. A drainage culvert, known as Carbon Creek, runs east-west to the south of the property. Carbon Creek flows into the San Gabriel River. Neither Carbon Creek nor San Gabriel River is used as a drinking water source for Orange County Water District. The site is located in the coastal plain and is underlain by three major aquifer systems. Groundwater flows toward the southwest. The City of Fullerton and the surrounding cities of Anaheim and Orange use groundwater in the area as a source for a portion of their drinking water. The aquifer beneath the site is part of the groundwater system used for this drinking water. The Orange County Water District manages four drinking water wells in this area. Surface water drainage around the site empties to the storm sewer which drains to Carbon Creek which drains to the San Gabriel River. The San Gabriel River is not a regulated drinking water source.

2.6. Releases from the Facility may have migrated toward the drinking water wells surrounding the facility and the San Gabriel River via Carbon Creek.

WORK TO BE PERFORMED

3. Based on the foregoing FINDINGS OF FACT, IT IS HEREBY ORDERED THAT:

3.1. Respondent shall perform the work required by this Order in a manner consistent with: the attached Scopes of

Work; DTSC-approved RCRA Facility Investigation Workplan, Corrective Measures Study Workplan, Corrective Measures Implementation Workplan, and any other DTSC-approved Workplans; Health and Safety Code and other applicable state and federal laws and their implementing regulations; and applicable DTSC or U.S. EPA guidance documents. Applicable guidance documents include, but are not limited to, the "RCRA Facility Investigation (RFI) Guidance" (Interim Final, May 1989, EPA 530/SW-89-031), "RCRA Groundwater Monitoring Technical Enforcement Guidance Document" (OSWER Directive 9950.1, September 1986), "Test Methods For Evaluating Solid Waste" (SW-846), and "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities" (EPA 530/SW-85-031, July 1986).

3.2. Interim Measures (IM).

3.2.1. Respondent shall evaluate available data and assess the need for interim measures in addition to those specifically required by this Order. Interim measures shall be used whenever possible to control or abate immediate threats to human health and/or the environment, and to prevent and/or minimize the spread of contaminants while long-term corrective action alternatives are being evaluated.

3.2.2. In the event Respondent identifies an immediate or potential threat to human health and/or the environment, discovers new releases of hazardous waste and/or hazardous waste constituents, or discovers new solid waste management units not previously identified, Respondent shall notify the DTSC Project Coordinator orally within 48 hours of discovery and notify DTSC in writing within 10 days of discovery summarizing the findings, including the immediacy and magnitude of the potential threat to human health and/or the environment. Within 30 days of receiving DTSC's written request, Respondent shall submit to DTSC an IM Workplan for approval. {Note: In some instances, where interim measures must be implemented quickly, DTSC may limit or not require the submittal of plans and specifications.} The IM Workplan shall include a schedule for submitting to DTSC an IM Operation and Maintenance Plan and IM Plans and Specifications. The IM Workplan, IM Operation and Maintenance Plan, and IM Plans and Specifications shall be developed in a manner consistent with the Scope of Work for Interim Measures Implementation appended as Attachment A. If DTSC determines that immediate action is required, the DTSC Project Coordinator may orally authorize the Respondent to act prior to DTSC's receipt of the IM Workplan.

3.2.3. If DTSC identifies an immediate or potential threat to human health and/or the environment, discovers new releases of hazardous waste and/or hazardous waste constituents, or discovers new solid waste management units not previously identified, DTSC will notify Respondent in writing. Within 30 days of receiving DTSC's written notification, Respondent shall submit to DTSC for approval an IM Workplan that identifies Interim Measures that will mitigate the threat. {Note: In some instances, where interim measures must be implemented quickly, DTSC may limit or not require the submittal of plans and specifications.} The IM Workplan shall include a schedule for submitting to DTSC an IM Operation and Maintenance Plan and IM Plans and Specifications. The IM Workplan, IM Operation and Maintenance Plan, and IM Plans and Specifications shall be developed in a manner consistent with the Scope of Work for Interim Measures

Implementation appended as Attachment A. If DTSC determines that immediate action is required, the DTSC Project Coordinator may orally authorize Respondent to act prior to receipt of the IM Workplan.

3.2.4. All IM Workplans shall ensure that the Interim Measures are designed to mitigate current or potential threats to human health and/or the environment, and should, to the extent practicable, be consistent with the objectives of, and contribute to the performance of, any remedy which may be required at the Facility.

3.2.5. Concurrent with the submission of an IM Workplan, Respondent shall submit to DTSC a Health and Safety Plan in accordance with the Scope of Work for a Health and Safety Plan, Attachment B.

3.2.6. Concurrent with the submission of an IM Workplan, Respondent shall submit to DTSC a Community Profile for DTSC approval in accordance with Attachment C. Based on the information provided in the Community Profile, if DTSC determines that there is a high level of community concern about the Facility, DTSC may require Respondent to prepare a Public Participation Plan.

3.3. RCRA Facility Investigation (RFI).

3.3.1. Within 60 days of the effective date of this Order, Respondent shall submit to DTSC a Workplan for a RCRA Facility Investigation ("RFI Workplan"). The RFI Workplan is subject to approval by DTSC and shall be developed in a manner consistent with the Scope of Work for a RCRA Facility Investigation contained in Attachment D. DTSC will review the RFI Workplan and notify Respondent in writing of DTSC's approval or disapproval.

3.3.2. The RFI Workplan shall detail the methodology to: (1) gather data needed to make decisions on interim measures/ stabilization during the early phases of the RCRA Facility Investigation; (2) identify and characterize all sources of contamination; (3) define the nature, degree and extent of contamination; (4) define the rate of movement and direction of contamination flow; (5) characterize the potential pathways of contaminant migration; (6) identify actual or potential human and/or ecological receptors; and (7) support development of alternatives from which a corrective measure will be selected by DTSC. A specific schedule for implementation of all activities shall be included in the RFI Workplan.

3.3.3. Respondent shall submit a RFI Report to DTSC for approval in accordance with DTSC-approved RFI Workplan schedule. The RFI Report shall be developed in a manner consistent with the Scope of Work for a RCRA Facility Investigation contained in Attachment D. If there is a phased investigation, separate RFI Reports and a report that summarizes the findings from all phases of the RFI must be submitted to DTSC. DTSC will review the RFI Report(s) and notify Respondent in writing of DTSC's approval or disapproval.

3.3.4. Concurrent with the submission of a RFI Workplan, Respondent shall submit to DTSC a Health and Safety Plan in accordance with Attachment B. If Workplans for both an IM and RFI are required by this Order, Respondent may submit a single Health and Safety Plan that addresses the combined IM and RFI activities.

3.3.5. Respondent shall submit a RFI Summary Fact Sheet to DTSC that summarizes the findings from all phases of the RFI. The RFI Summary Fact Sheet shall be submitted to DTSC in accordance with the schedule contained in the approved RFI Workplan. DTSC will

review the RFI Summary Fact Sheet and notify Respondent in writing of DTSC's approval or disapproval, including any comments and/or modifications. When DTSC approves the RFI Summary Fact Sheet, Respondent shall mail the approved RFI Summary Fact Sheet to all individuals on the Facility mailing list established pursuant to California Code of Regulations, title 22, section 66271.9(c)(1)(D), within 15 calendar days of receipt of written approval.

3.3.6. Concurrent with the submission of a RFI Workplan, Respondent shall submit to DTSC a Community Profile for DTSC approval in accordance with Attachment C. Based on the information provided in the Community Profile, if DTSC determines that there is a high level of community concern about the Facility, DTSC may require Respondent to prepare a Public Participation Plan.

3.4. Corrective Measures Study (CMS).

3.4.1. Respondent shall prepare a Corrective Measures Study if contaminant concentrations exceed current health-based action levels and/or if DTSC determines that the contaminant releases pose a potential threat to human health and/or the environment.

3.4.2. Within 30 days of DTSC's approval of the RFI Report (or of Respondent's receipt of a written request from DTSC), Respondent shall submit a CMS Workplan to DTSC. The CMS Workplan is subject to approval by DTSC and shall be developed in a manner consistent with the Scope of Work for a Corrective Measures Study contained in Attachment E.

3.4.3. The CMS Workplan shall detail the methodology for developing and evaluating potential corrective measures to remedy any contamination at the Facility. The CMS Workplan shall identify the potential corrective measures, including any innovative technologies, that may be used for the containment, treatment, remediation, and/or disposal of contamination.

3.4.4. Respondent shall prepare treatability studies for all potential corrective measures that involve treatment except where Respondent can demonstrate to DTSC's satisfaction that they are not needed. The CMS Workplan shall include, at a minimum, a summary of the proposed treatability study including a conceptual design, a schedule for submitting a treatability study workplan, or Respondent's justification for not proposing a treatability study.

3.4.5. Respondent shall submit a CMS Report to DTSC for approval in accordance with DTSC-approved CMS Workplan schedule. The CMS Report shall be developed in a manner consistent with the Scope of Work for a Corrective Measures Study contained in Attachment E. DTSC will review the CMS Report and notify Respondent in writing of DTSC's approval or disapproval.

3.5. Remedy Selection.

3.5.1. DTSC will provide the public with an opportunity to review and comment on the final draft of the CMS Report, DTSC's proposed corrective measures for the Facility, and DTSC's justification for selection of such corrective measures.

3.5.2. Following the public comment period, DTSC may select final corrective measures or require Respondent to revise the CMS Report and/or perform additional corrective measures studies.

3.5.3. DTSC will notify Respondent of the final corrective measures selected by DTSC in the Final Decision and Response to Comments. The notification will include DTSC's reasons for selecting the corrective measures.

3.6. Corrective Measures Implementation (CMI).

3.6.1. Within 60 days of Respondent's receipt of notification of DTSC's selection of the corrective measures, Respondent shall submit to DTSC a Corrective Measures Implementation (CMI) Workplan. The CMI Workplan is subject to approval by DTSC and shall be developed in a manner consistent with the Scope of Work for Corrective Measures Implementation contained in Attachment F.

3.6.2. Concurrent with the submission of a CMI Workplan, Respondent shall submit to DTSC a Health and Safety Plan in accordance with Attachment B.

3.6.3. Concurrent with the submission of a CMI Workplan, Respondent shall submit to DTSC a Community Profile for DTSC approval in accordance with Attachment C. Based on the information provided in the Community Profile, if DTSC determines that there is a high level of community concern about the Facility, DTSC may require Respondent to prepare a Public Participation Plan.

3.6.4. The CMI program shall be designed to facilitate the design, construction, operation, maintenance, and monitoring of corrective measures at the Facility. In accordance with the schedule contained in the approved CMI Workplan, Respondent shall submit to DTSC the documents listed below. These documents shall be developed in a manner consistent with the Scope of Work for Corrective Measures Implementation contained in Attachment F.

- Operation and Maintenance Plan
- Draft Plans and Specifications
- Final Plans and Specifications
- Construction Workplan
- Construction Completion Report
- Corrective Measures Completion Report

3.6.5. DTSC will review all required CMI documents and notify Respondent in writing of DTSC's approval or disapproval.

3.6.6. As directed by DTSC, Respondent shall establish a financial assurance mechanism for Corrective Measures Implementation. The financial assurance mechanisms may include a performance or surety bond, liability insurance, an escrow performance guarantee account, a trust fund, financial test, or corporate guarantee as described in California Code of Regulations, title 22, section 66265.143 or any other mechanism acceptable to DTSC. The mechanism shall be established to allow DTSC access to the funds to undertake Corrective Measures Implementation tasks if Respondent is unable or unwilling to undertake the required actions.

OTHER REQUIREMENTS AND PROVISIONS

4.1. Project Coordinator. Within 14 days of the effective date of this Order, DTSC and Respondent shall each designate a Project Coordinator and shall notify each other in writing of the Project Coordinator selected. Each Project Coordinator shall be responsible for overseeing the implementation of this Order and for designating a person to act in his/her absence. All communications between Respondent and DTSC, and all documents, report approvals, and other correspondence concerning the activities performed pursuant to this Order shall be directed through the Project Coordinators. Each

party may change its Project Coordinator with at least seven days prior written notice.

4.2. Department Approval.

4.2.1. Respondent shall revise any workplan, report, specification, or schedule in accordance with DTSC's written comments. Respondent shall submit to DTSC any revised documents by the due date specified by DTSC. Revised submittals are subject to DTSC's approval or disapproval.

4.2.2. Upon receipt of DTSC's written approval, Respondent shall commence work and implement any approved workplan in accordance with the schedule and provisions contained therein.

4.2.3. Any Department approved workplan, report, specification, or schedule required by this Order shall be deemed incorporated into this Order.

4.2.4. Verbal advice, suggestions, or comments given by DTSC representatives will not constitute an official approval or decision.

4.3. Submittals.

4.3.1. Beginning with the first full month following the effective date of this Order, Respondent shall provide DTSC with monthly progress reports of corrective action activities conducted pursuant to this Order. Progress reports are due on the 10th day of the month following the close of the reporting period. The progress reports shall conform to the Scope of Work for Progress Reports contained in Attachment G. DTSC may adjust the frequency of progress reporting to be consistent with site-specific activities.

4.3.2. Any report or other document submitted by Respondent pursuant to this Order shall be signed and certified by the project coordinator, a responsible corporate officer, or a duly authorized representative.

4.3.3. The certification required above, shall be in the following form:

> I certify that the information contained in or accompanying this submittal is true, accurate, and complete. As to those portions of this submittal for which I cannot personally verify the accuracy, I certify that this submittal and all attachments were prepared at my direction in accordance with procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted.
>
> Signature: _____
> Name: _____
> Title: _____
> Date: _____

4.3.4. Respondent shall provide three copies of all documents, including but not limited to, workplans, reports, and correspondence of 15 pages or longer. Submittals specifically exempted from this copy requirement are all progress reports and correspondence of less than 15 pages, of which one copy is required.

4.3.5. Unless otherwise specified, all reports, correspondence, approvals, disapprovals, notices, or other

submissions relating to this Order shall be in writing and shall be sent to the current Project Coordinators.

4.4. Proposed Contractor/Consultant. All work performed pursuant to this Order shall be under the direction and supervision of a professional engineer or registered geologist, registered in California, with expertise in hazardous waste site cleanup. Respondent's contractor or consultant shall have the technical expertise sufficient to fulfill his or her responsibilities. Within 14 days of the effective date of this Order, Respondent shall notify the DTSC Project Coordinator in writing of the name, title, and qualifications of the professional engineer or registered geologist and of any contractors or consultants and their personnel to be used in carrying out the requirements of this Order. DTSC may disapprove of Respondent's contractor and/or consultant.

4.5. Quality Assurance.

4.5.1. All sampling and analyses performed by Respondent under this Order shall follow applicable Department and U.S. EPA guidance for sampling and analysis. Workplans shall contain quality assurance/quality control and chain of custody procedures for all sampling, monitoring, and analytical activities. Any deviations from the approved workplans must be approved by DTSC prior to implementation, must be documented, including reasons for the deviations, and must be reported in the applicable report (e.g., RFI Report).

4.5.2. The names, addresses, and telephone numbers of the California State certified analytical laboratories Respondent proposes to use must be specified in the applicable workplans.

4.5.3. All workplans required under this Order shall include data quality objectives for each data collection activity to ensure that data of known and appropriate quality are obtained and that data are sufficient to support their intended uses.

4.5.4. Respondent shall monitor to ensure that high quality data are obtained by its consultant or contract laboratories. Respondent shall ensure that laboratories used by Respondent for analysis perform such analysis according to the latest approved edition of "Test Methods for Evaluating Solid Waste, (SW-846)", or other methods deemed satisfactory to DTSC. If methods other than U.S. EPA methods are to be used, Respondent shall specify all such protocols in the applicable workplan (e.g., RFI Workplan). DTSC may reject any data that do not meet the requirements of the approved workplan, U.S. EPA analytical methods, or quality assurance/quality control procedures, and may require resampling and analysis.

4.5.5. Respondent shall ensure that the California State certified laboratories used by Respondent for analyses have a quality assurance/quality control program. DTSC may conduct a performance and quality assurance/quality control audit of the laboratories chosen by Respondent before, during, or after sample analyses. Upon request by DTSC, Respondent shall have its selected laboratory perform analyses of samples provided by DTSC to demonstrate laboratory performance. If the audit reveals deficiencies in a laboratory's performance or quality assurance/quality control procedures, resampling and analysis may be required.

4.6. Sampling and Data/Document Availability.

4.6.1. Respondent shall submit to DTSC upon request the results of all sampling and/or tests or other data generated by its

employees, agents, consultants, or contractors pursuant to this Order.

4.6.2. Notwithstanding any other provisions of this Order, DTSC retains all of its information gathering and inspection authority and rights, including enforcement actions related thereto, under Health and Safety Code, and any other state or federal statutes or regulations.

4.6.3. Respondent shall notify DTSC in writing at least 7 days prior to beginning each separate phase of field work approved under any workplan required by this Order. If Respondent believes it must commence emergency field activities without delay, Respondent may seek emergency telephone authorization from DTSC Project Coordinator or, if the Project Coordinator is unavailable, his/her Branch Chief, to commence such activities immediately.

4.6.4. At the request of DTSC, Respondent shall provide or allow DTSC or its authorized representative to take split or duplicate samples of all samples collected by Respondent pursuant to this Order. Similarly, at the request of Respondent, DTSC shall allow Respondent or its authorized representative to take split or duplicate samples of all samples collected by DTSC under this Order.

4.7. Access.

4.7.1. Subject to the Facility's security and safety procedures, Respondent shall provide DTSC and its representatives access at all reasonable times to the Facility and any other property to which access is required for implementation of this Order and shall permit such persons to inspect and copy all records, files, photographs, documents, including all sampling and monitoring data, that pertain to work undertaken pursuant to this Order and that are within the possession or under the control of Respondent or its contractors or consultants.

4.7.2. To the extent that work being performed pursuant to this Order must be done beyond the Facility property boundary, Respondent shall use its best efforts to obtain access agreements necessary to complete work required by this Order from the present owners of such property within 30 days of approval of any workplan for which access is required. Best efforts as used in this paragraph shall include, at a minimum, a letter by certified mail from the Respondent to the present owners of such property requesting an agreement to permit Respondent and DTSC and its authorized representatives access to such property and offering the payment by Respondent of reasonable sums of money in consideration of granting access. Any such access agreement shall provide for access to DTSC and its representatives. Respondent shall provide DTSC's Project Coordinator with a copy of any access agreements. In the event that an agreement for access is not obtained within 30 days of approval of any workplan for which access is required, or of the date that the need for access becomes known to Respondent, Respondent shall notify DTSC in writing within 14 days thereafter regarding both the efforts undertaken to obtain access and its failure to obtain such agreements. DTSC may, at its discretion, assist Respondent in obtaining access.

4.7.3. Nothing in this section limits or otherwise affects DTSC's right of access and entry pursuant to any applicable state or federal law or regulation.

4.7.4. Nothing in this Order shall be construed to limit or otherwise affect Respondent's liability and obligation to perform corrective action including corrective action beyond the Facility boundary.

4.8. Record Preservation.

4.8.1. Respondent shall retain, during the implementation of this Order and for a minimum of six years thereafter, all data, records, and documents that relate in any way to the implementation of this Order or to hazardous waste management and/or disposal at the Facility. Respondent shall notify DTSC in writing 90 days prior to the destruction of any such records, and shall provide DTSC with the opportunity to take possession of any such records. Such written notification shall reference the effective date, caption, and docket number of this Order and shall be addressed to:

Chief
Standardized Permit and Corrective Action Branch
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826

4.8.2. If Respondent retains or employs any agent, consultant, or contractor for the purpose of complying with the requirements of this Order, Respondent will require any such agents, consultants, or contractors to provide Respondent a copy of all documents produced pursuant to this Order.

4.8.3. All documents pertaining to this Order shall be stored in a central location at the Facility to afford ease of access by DTSC and its representatives.

4.9. Change in Ownership. No change in ownership or corporate or partnership status relating to the Facility shall in any way alter Respondent's responsibility under this Order. No conveyance of title, easement, or other interest in the Facility, or a portion of the Facility, shall affect Respondent's obligations under this Order. Unless DTSC agrees that such obligations may be transferred to a third party, Respondent shall be responsible for and liable for any failure to carry out all activities required of Respondent by the terms and conditions of this Order, regardless of Respondent's use of employees, agents, contractors, or consultants to perform any such tasks.

4.10. Notice to Contractors and Successors. Respondent shall provide a copy of this Order to all contractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this Order and shall condition all such contracts on compliance with the terms of this Order. Respondent shall give written notice of this Order to any successor in interest prior to transfer of ownership or operation of the Facility and shall notify DTSC at least seven days prior to such transfer.

4.11. Compliance with Applicable Laws. All actions required to be taken pursuant to this Order shall be undertaken in accordance with the applicable requirements of all local, state, and federal laws and regulations. Respondent shall obtain or cause its representatives to obtain all permits and approvals necessary under such laws and regulations.

4.12. Costs. Respondent is liable for all costs associated with the implementation of this Order, including all costs incurred by DTSC in overseeing the work required by this Order.

4.13. Endangerment during Implementation. In the event that DTSC determines that any circumstances or activity (whether or not pursued in compliance with this Order) are creating an imminent or substantial endangerment to the health or welfare of people at the Facility or in the surrounding area or to the environment, DTSC may order Respondent to stop further implementation of this Order for such period of time as needed to abate the endangerment. Any deadline in this Order directly affected by an Order to Stop Work under this section shall be extended for the term of the Order to Stop Work.

4.14. Liability. Nothing in this Order shall constitute or be construed as a satisfaction or release from liability for any conditions or claims arising as a result of past, current, or future operations of Respondent. Notwithstanding compliance with the terms of this Order, Respondent may be required to take further actions as are necessary to protect public health or welfare or the environment.

4.15. Government Liabilities. The State of California shall not be liable for injuries or damages to persons or property resulting from acts or omissions by Respondent or related parties specified in section 4.19 in carrying out activities pursuant to this Order, nor shall the State of California be held as a party to any contract entered into by Respondent or its agents in carrying out activities pursuant to the Order.

4.16. Additional Enforcement Actions. By issuance of this Order, DTSC does not waive the right to take further enforcement actions.

4.17. Incorporation of Plans and Reports. All plans, schedules, and reports that require Department approval and are submitted by Respondent pursuant to this Order are incorporated in this Order upon approval by DTSC.

4.18. Penalties for Noncompliance. Failure to comply with the terms of this Order may subject Respondent to costs, penalties, and/or punitive damages for any costs incurred by DTSC or other government agencies as a result of such failure, as provided by Health and Safety Code section 25188 and other applicable provisions of law.

4.19. Parties Bound. This Order shall apply to and be binding upon Respondent, and its officers, directors, agents, employees, contractors, consultants, receivers, trustees, successors, and assignees, including but not limited to individuals, partners, and subsidiary and parent corporations.

4.20. Compliance with Waste Discharge Requirements. Respondent shall comply with all applicable waste discharge requirements issued by the State Water Resources Control Board or a California regional water quality control board.

4.21. Submittal Summary. Below is a summary of the major reporting requirements contained in this Order. The summary is provided as a general guide and does not contain all requirements. Please refer to the specific language of this Order for all the requirements.

Section	Action	Due Date
3.1	Implement approved Workplans	In accordance with schedules contained in approved Workplans
4.1	Designate Project Coordinator and notify DTSC in writing	14 days from effective date of Order
3.2.2	Notify DTSC orally of potential threats to human health	48 hours after discovery
3.2.2	Notify DTSC in writing of potential threats to human health	10 days after discovery
3.2	Submit Interim Measures Workplan, Health and Safety Plan, and Public Involvement Plan	30 days after DTSC request
3.3	Submit RFI Workplan, Current Conditions Report, Public Involvement Plan, and Health and Safety Plan	60 days from effective date of Order
3.4.2	Submit CMS Workplan	30 days after DTSC request
3.6.1	Submit CMI Workplan	60 days from receipt of notification of DTSC selection of a corrective measure
4.3.1	Submit first Progress Report	10th day of the month following the effective date of Order
4.3.1	Submit Progress Reports	monthly
4.4	Notify DTSC in writing of contractors to carry out terms of Order	14 days from effective date of Order
4.6.3	Notify DTSC of when field work starts	7 days before each phase of field work

RIGHT TO A HEARING

5. You may request a hearing to challenge the Order. Appeal procedures are described in the attached Statement to Respondent.

EFFECTIVE DATE

6. This Order is final and effective 20 days from the date of mailing, which is the date of the cover letter transmitting the Order to you, unless you request a hearing within the 20-day period. The remaining paragraphs of the Order are final and effective 20 days from the date of mailing which is the date of the cover letter transmitting the order to you, unless you request a hearing within the 20-day period.

Date of Issuance 6/10/2002

Mohinder Sandhu, Chief
Department of Toxic Substances Control

ATTACHMENT A

SCOPE OF WORK FOR INTERIM MEASURES IMPLEMENTATION

PURPOSE

Interim measures are actions to control and/or eliminate releases of hazardous waste and/or hazardous constituents from a facility prior to the implementation of a final corrective measure. Interim measures must be used whenever possible to achieve the goal of stabilization which is to control or abate threats to human health and/or the environment, and to prevent or minimize the spread of contaminants while long-term corrective action alternatives are being evaluated.

SCOPE

The documents required for Interim Measures (IM) are, unless the Department of Toxic Substances Control (Department) specifies otherwise, an IM Workplan, an Operation and Maintenance Plan and IM Plans and Specifications. The scope of work (SOW) for each document is specified below. The SOWs are intended to be flexible documents capable of addressing both simple and complex site situations. If the Owner/Operator or Respondent can justify, to the satisfaction of the Department, that a plan or portions thereof are not needed in the given site specific situation, then the Department may waive that requirement.

The Department may require the Owner/Operator or Respondent to conduct additional studies beyond what is discussed in the SOWs in order to support the IM program. The Owner/Operator or Respondent will furnish all personnel, materials and services necessary to conduct the additional tasks.

A. Interim Measures Workplan

The Owner/Operator or Respondent shall prepare an IM Workplan that evaluates interim measure options and clearly describes the proposed interim measure, the key components or elements that are needed, describes the designer's vision of the interim measure in the form of conceptual drawings and schematics, and includes procedures and schedules for implementing the interim measure(s). The IM Workplan must be approved by the Department prior to implementation. The IM Workplan must, at a minimum, include the following elements:

1. Introduction/Purpose

Describe the purpose of the document and provide a summary of the project.

2. Conceptual Model of Contaminant Migration

It is important to know where the contaminants are and to understand how they are moving before an adequate interim measure can be developed. To address this critical question, the Owner/Operator or Respondent must present a conceptual model of the site and contaminant migration. The conceptual model consists of a working hypothesis of how the contaminants may move from the release source to the receptor population. The conceptual model is developed by looking at the applicable physical parameters (e.g., water solubility, density, Henry's Law Constant, etc.) for each contaminant and assessing how the contaminant may migrate given the existing site conditions (geologic features, depth to groundwater, etc.). Describe the phase (water, soil, gas, non-aqueous) and location where contaminants are likely to be found. This analysis may have already been done as part of earlier work (e.g., Current Conditions Report). If this is the case, then provide a summary of the conceptual model with a reference to the earlier document.

3. Evaluation of Interim Measure Alternatives

List, describe and evaluate interim measure alternatives that have the potential to stabilize the facility. Propose interim measures for implementation and provide rationale for the selection. Document the reasons for excluding any interim measure alternatives.

4. Description of Interim Measures

Qualitatively describe what the proposed interim measure is supposed to do and how it will function at the facility.

5. Data Sufficiency

Review existing data needed to support the design effort and establish whether or not there are sufficient accurate data available for this purpose. The Owner/Operator or Respondent must summarize the assessment findings and specify any additional data needed to complete the interim measure design. The

Department may require or the Owner/Operator or Respondent may propose that sampling and analysis plans and/or treatability study workplans be developed to obtain the additional data. Submittal times for any new sampling and analysis plans and/or treatability study workplans must be included in the project schedule.

6. Project Management

Describe the levels of authority and responsibility (include organization chart), lines of communication and a description of the qualifications of key personnel who will direct the interim measure design and implementation effort (including contractor personnel).

7. Project Schedule

The project schedule must specify all significant steps in the process, when any key documents (e.g., plans and specifications, operation and maintenance plan) are to be submitted to the Department and when the interim measure is to be implemented.

8. Design Basis

Discuss the process and methods used to design all major components of the interim measure. Discuss the significant assumptions made and possible sources of error. Provide justification for the assumptions.

9. Conceptual Process/Schematic Diagrams.

10. Site plan showing preliminary plant layout and/or treatment area.

11. Tables listing number and type of major components with approximate dimensions.

12. Tables giving preliminary mass balances.

13. Site safety and security provisions (e.g., fences, fire control, etc.).

14. Waste Management Practices

Describe the wastes generated by the construction of the interim measure and how they will be managed. Also discuss drainage and indicate how rainwater runoff will be managed.

15. Required Permits

List and describe the permits needed to construct the interim measure. Indicate on the project schedule when the permit applications will be submitted to the applicable agencies and an estimate of the permit issuance date.

16. Sampling and monitoring activities may be needed for design and during construction of the interim measure. If sampling activities are necessary, the IM Workplan must include a complete sampling and analysis section which specifies the following information:
    a. Description and purpose of monitoring tasks;
    b. Data quality objectives;
    c. Analytical test methods and detection limits;
    d. Name of analytical laboratory;
    e. Laboratory quality control (include laboratory QA/QC procedures in appendices)
    f. Sample collection procedures and equipment;
    g. Field quality control procedures:
        - duplicates (10% of all field samples)
        - blanks (field, equipment, etc.)
        - equipment calibration and maintenance
        - equipment decontamination
        - sample containers
        - sample preservation
        - sample holding times (must be specified)
        - sample packaging and shipment
        - sample documentation (field notebooks, sample labeling, etc);
    h. Criteria for data acceptance and rejection; and
    i. Schedule of monitoring frequency.

    The Owner/Operator or Respondent shall follow all Department and USEPA guidance for sampling and analysis. The Department may request that the sampling and analysis section be a separate document.

17. Appendices including:

    Design Data - Tabulations of significant data used in the design effort;

    Equations - List and describe the source of major equations used in the design process;

    Sample Calculations - Present and explain one example calculation for significant calculations; and

    Laboratory or Field Test Results.

B. Interim Measures Operation and Maintenance Plan

The Owner/Operator or Respondent shall prepare an Interim Measures Operation and Maintenance (O&M) Plan that includes a strategy and procedures for performing operations, maintenance, and monitoring of the interim measure(s). An Interim Measures Operation and Maintenance Plan shall be submitted to the Department simultaneously with the Plans and Specifications. The O&M plan shall, at a minimum, include the following elements:

1. Purpose/Approach

   Describe the purpose of the document and provide a summary of the project.

2. Project Management

   Describe the levels of authority and responsibility (include organization chart), lines of communication and a description of the qualifications of key personnel who will operate and maintain the interim measure(s) (including contractor personnel).

3. System Description

   Describe the interim measure and identify significant equipment.

4. Personnel Training

   Describe the training process for O&M personnel. The Owner/Operator or Respondent shall prepare, and include in the technical specifications governing treatment systems, contractor requirements for providing: appropriate service visits by experienced personnel to supervise the installation, adjustment, start up and operation of the treatment systems, and training covering appropriate operational procedures once the start-up has been successfully accomplished.

5. Start-Up Procedures

   Describe system start-up procedures including any operational testing.

6. Operation and Maintenance Procedures

   Describe normal operation and maintenance procedures including:

a. Description of tasks for operation;
b. Description of tasks for maintenance;
c. Description of prescribed treatment or operation condition, and
d. Schedule showing frequency of each O&M task.

7. Replacement schedule for equipment and installed components.

8. Waste Management Practices

Describe the wastes generated by operation of the interim measure and how they will be managed. Also discuss drainage and indicate how rainwater runoff will be managed.

9. Sampling and monitoring activities may be needed for effective operation and maintenance of the interim measure. If sampling activities are necessary, the O&M plan must include a complete sampling and analysis section which specifies the following information:

a. Description and purpose of monitoring tasks;
b. Data quality objectives;
c. Analytical test methods and detection limits;
d. Name of analytical laboratory;
e. Laboratory quality control (include laboratory QA/QC procedures in appendices)
f. Sample collection procedures and equipment;
g. Field quality control procedures:
   - o duplicates (10% of all field samples)
   - o blanks (field, equipment, etc.)
   - o equipment calibration and maintenance
   - o equipment decontamination
   - o sample containers
   - o sample preservation
   - o sample holding times (must be specified)
   - o sample packaging and shipment
   - o sample documentation (field notebooks, sample labeling, etc);
h. Criteria for data acceptance and rejection; and
i. Schedule of monitoring frequency.

The Owner/Operator or Respondent shall follow all Department and USEPA guidance for sampling and analysis. The Department may request that the sampling and analysis section be a separate document.

10. O&M Contingency Procedures:

a. Procedures to address system breakdowns and

operational problems including a list of redundant and emergency back-up equipment and procedures;

b. Should the interim measure suffer complete failure, specify alternate procedures to prevent release or threatened releases of hazardous substances, pollutants or contaminants which may endanger public health and/or the environment or exceed cleanup standards; and

c. The O&M Plan must specify that, in the event of a major breakdown and/or complete failure of the interim measure (includes emergency situations), the Owner/Operator or Respondent will orally notify the Department within 24 hours of the event and will notify the Department in writing within 72 hours of the event. The written notification must, at a minimum, specify what happened, what response action is being taken and/or is planned, and any potential impacts on human health and the environment.

11. Data Management and Documentation Requirements

Describe how analytical data and results will be evaluated, documented and managed, including development of an analytical database. State the criteria that will be used by the project team to review and determine the quality of data.

The O&M Plan shall specify that the Owner/Operator or Respondent collect and maintain the following information:

a. Progress Report Information

- Work Accomplishments (e.g., performance levels achieved, hours of treatment operation, treated and/or excavated volumes, concentration of contaminants in treated and/or excavated volumes, nature and volume of wastes generated, etc.).

- Record of significant activities (e.g., sampling events, inspections, problems encountered, action taken to rectify problems, etc.).

b. Monitoring and laboratory data;
c. Records of operating costs; and
d. Personnel, maintenance and inspection records.

The Department may require that the Owner/Operator or Respondent submit additional reports that evaluate the effectiveness of the interim measure in meeting the stabilization goal.

C. IM Plans and Specifications

The Owner/Operator or Respondent shall prepare Plans and Specifications for the interim measure that are based on the conceptual design but include additional detail. The Plans and Specifications shall be submitted to the Department simultaneously with the Operation and Maintenance Plan. The design package must include drawings and specifications needed to construct the interim measure. Depending on the nature of the interim measure, many different types of drawings and specifications may be needed. Some of the elements that may be required are:

- General Site Plans
- Process Flow Diagrams
- Mechanical Drawings
- Electrical Drawings
- Structural Drawings
- Piping and Instrumentation Diagrams
- Excavation and Earthwork Drawings
- Equipment Lists
- Site Preparation and Field Work Standards
- Preliminary Specifications for Equipment and Material

General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the project specifications to the Department, the Owner/Operator or Respondent shall:

a. Proofread the specifications for accuracy and consistency with the conceptual design; and

b. Coordinate and cross-check the specifications and drawings.

ATTACHMENT B

SCOPE OF WORK FOR A HEALTH AND SAFETY PLAN

Objectives

Describe the goals and objectives of the Health and Safety Plan (must apply to on-site personnel and visitors). The Health and Safety Plan must be consistent with the facility Contingency Plan, OSHA Regulations, NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985), all state and local regulations and other Implementing Agency guidance as provided.

Hazard Assessment

List and describe the potentially hazardous substances that could be encountered by field personnel during different phases of the activities.

Discuss the following:

- Inhalation Hazards
- Dermal Exposure
- Ingestion Hazards
- Physical Hazards
- Overall Hazard Rating

Include a table that, at a minimum, lists: Known Contaminants, Highest Observed Concentration, Media, Symptoms/Effects of Acute Exposure.

Personal Protection/monitoring Equipment

For each task, describe personal protection levels and identify all monitoring equipment.

Describe any action levels and corresponding response actions (i.e., when will levels of safety be upgraded).

Describe decontamination procedures and areas.

Site organization and Emergency Contacts

List and identify all contacts (include phone numbers). Identify

the nearest hospital and provide a regional map showing the shortest route from the facility to the hospital. Describe site emergency procedures and any site safety organizations. Include evacuation procedures for neighbors (where applicable).

Include a facility Map showing emergency station locations (e.g., first aid, eye wash areas, etc.).

ATTACHMENT C

COMMUNITY PROFILE OUTLINE
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The following items should be included in the Community Profile:

SITE DESCRIPTION

- Description of proposed project.
- Map.
- Description of the site/facility location.
- Description of the surrounding land uses and environmental resources (including proximity to residential housing, schools, churches, etc.).
- Visibility of the site to neighbors.
- Demographics of community in which the site is located (e.g., socioeconomic level, ethnic composition, specific language considerations, etc.). This information may be found in local libraries (e.g., census records).

LOCAL INTEREST

- Contacts with community members - any inquiries from community members, groups, organizations, etc. (include names, phone numbers, and addresses on the key contact list).
- Community interactions - any current meetings, events, presentations, etc.
- Media coverage - any newspaper, magazine, television, etc., coverage.
- Government contacts - city and county staff, state and local elected officials.

KEY CONTACT LIST

- Names, addresses, and phone numbers of city manager, city/county planning department staff, local elected officials, and other community members with whom previous contact has been made.

PAST PUBLIC INVOLVEMENT ACTIVITIES

- Any ad hoc committees, community meetings, workshops, letters, newsletters, etc., about the site or similar activity.

KEY ISSUES AND CONCERNS

- Any specific concerns/issues raised by the community regarding the site/facility or any activities performed on the site/facility.
- Any anticipated concerns/issues regarding the site/facility.
- Any general environmental concerns/issues in the community.

PP Review _____ Date_____

ATTACHMENT D

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION

PURPOSE

The purpose of this RCRA Facility Investigation (RFI) is to determine the nature and extent of releases of hazardous waste or constituents from regulated units, solid waste management units, and other source areas at the Facility and to gather all necessary data to support the Corrective Measures Study. The RFI must include characterization of the facility (processes, waste management, etc), environmental setting, source areas, nature and extent of contamination, migration pathways (transport mechanisms) and all potential receptors.

SCOPE

The documents required for an RFI are, unless the Department of Toxic Substances Control (Department) specifies otherwise, a Current Conditions Report, a RCRA Facility Investigation Workplan, a RCRA Facility Investigation Report and a Health and Safety Plan. The scope of work (SOW) for each document is specified below. The SOW's are intended to be flexible documents capable of addressing both simple and complex site situations. If the Respondent can justify, to the satisfaction of the Department, that a plan and/or report or portions thereof are not needed in the given site specific situation, then the Department may waive that requirement.

The Department may require the Respondent to conduct additional studies beyond what is discussed in the SOW's in order to meet the objectives of the RFI. The Respondent will furnish all personnel, materials and services necessary to conduct the additional tasks.

A. Current Conditions Report

The Current Conditions Report must describe existing information pertinent to the facility including operations, processes, waste management, geology, hydrogeology, contamination, migration pathways, potential receptor populations and interim corrective measures. The required format for a current conditions report is described below. If some of this information does not exist, so indicate in the applicable section.

1. Introduction

1.1 Purpose

Describe the purpose of the current conditions report (e.g., summary and evaluation of existing information related to the facility; required as a component of the RCRA Facility Investigation).

1.2 Organization of Report

Describe how the report is organized.

2. Facility Description

Summarize background, current operations, waste management and products produced at the facility. Include a map that shows the general geographic location of the facility.

Describe current facility structures including any buildings, tanks, sumps, wells, waste management areas, landfills, ponds, process areas and storage areas.

Include detailed facility maps that clearly show current property lines, the owners of all adjacent property, surrounding land use (residential, commercial, agricultural, recreational, etc.), all tanks, buildings, process areas, utilities, paved areas, easements, rights-of-way, waste management areas, ponds, landfills, piles, underground tanks, wells and other facility features.

3. Facility History

3.1 Ownership History

Describe the ownership history of the facility.

3.2 Operational History

Describe in detail how facility operations, processes and products have changed over time (historical aerial photographs could be useful for this purpose).

3.3 Regulatory History

Describe all permits (including waste discharge requirements) requested or received, any enforcement actions taken by the Department or designated agencies and any closure activities that are planned or underway.

3.4 Waste Generation

Describe all wastes (solid or hazardous) that have been generated at the facility. Include approximate waste volumes generated and summaries of any waste analysis data. Show how the waste stream (volume and chemical composition) has changed over time.

3.5 Waste Management

Describe in detail all past solid and hazardous waste treatment, storage and disposal activities at the facility. Show how these activities have changed over time and indicate the current status. Make a clear distinction between active waste management units and older out of service waste management units. Identify which waste management units are regulated under RCRA or California Health and Safety Code.

Include maps showing: (1) all solid or hazardous waste treatment, storage or disposal areas active after November 19, 1980, (2) all known past solid waste or hazardous waste treatment, storage or disposal areas regardless of whether they were active on November 19, 1980 and (3) all known past or present underground tanks or piping.

3.6 Spill and Discharge History

Provide approximate dates or periods of past product and waste spills, identify the materials spilled and describe any response actions conducted. Include a summary of any sampling data generated as a result of the spill. Include a map showing approximate locations of spill areas at the facility.

3.7 Chronology of Critical Events

Provide a chronological list (including a brief description) of major events, communications, agreements, notices of violation, spills, discharges that occurred throughout the facility's history.

4. Environmental Setting

4.1 Location/Land Use

Discuss facility size, location and adjacent land use. Include a rough demographic profile of the human population who use or have access to the facility and adjacent lands. Provide approximate distance to nearest residential areas, schools, nursing homes, hospitals, parks, playgrounds, etc.

4.2 Local Ecology

Describe any endangered or threatened species near the facility. Include a description of the ecological setting on and adjacent to the facility. Provide approximate distance to nearest environmentally sensitive areas such as marsh lands, wetlands, streams, oceans, forests, etc.

4.3 Topography and Surface Drainage

Describe the regional and site specific topography and surface drainage patterns that exist at the facility. Include a map that shows the topography and surface drainage depicting all waterways, wetlands, floodplains, water features, drainage patterns and surface water containment areas.

4.4 Climate

Discuss mean annual temperatures, temperature extremes, 24-hour rainfall, average annual rainfall, prevailing wind direction, etc.

4.5 Surface Water Hydrology

Describe the facility's proximity (distance) to surface water bodies (e.g., coastal waters, lakes, rivers, creeks, drainage basins, floodplains, vernal pools, wetlands, etc.).

4.6 Geology

Describe the regional and site specific geology including stratigraphy and structure. Include cross sections to show the subsurface stratigraphy.

4.7 Hydrogeology

Describe the regional and site specific hydrogeologic setting including any information concerning local aquifers, ground water levels, gradients, flow direction, hydraulic conductivity, and velocity. Include potentiometric surface contour maps. Describe the beneficial uses of the ground water (e.g., drinking water

supply, agricultural water supply, etc.).

4.8 Ground Water Monitoring System

Describe the facility's ground water monitoring system including a table detailing the existing well construction. The table must, at a minimum, identify the following construction details for each well:

Well ID
Completion Date
Drilling Method
Borehole Diameter (inches)
Well Casing Diameter and Type
Measuring Point Elevation (feet MSL)
Borehole Depth (feet BGS)
Depth of Well (feet)
Screened Interval
Formation Screened
Slot Size & Type (inches)
Filter Pack Material
Filter Pack Thickness
Type of Filter Pack Seal
Thickness of Filter Pack Seal
Pump System (dedicated or non-dedicated)
Type of Pump
Approximate Depth to Water (feet BGS)

If some of this information is not available, so indicate on the table with an "NA". {BGS: Below Ground Surface, MSL: Mean Sea Level}

The monitoring well locations must be shown on the facility map (see Section A.2 of this Attachment).

5. Existing Degree and Extent of Contamination

For each medium where the Agreement identifies a release (e.g., soil, ground water, surface water, air, etc.), describe the existing extent of contamination. This description must include all available monitoring data and qualitative information on the locations and levels of contamination at the facility (both onsite and offsite). Include a general assessment of the data quality, a map showing the location of all existing sampling points and potential source areas and contour maps showing any existing ground water plumes at the facility (if ground water release). Highlight potential ongoing release areas that would warrant use of interim corrective measures (see Section 8, Interim Corrective Measures).

5.1 Previous Investigations

List and briefly describe all previous investigations that have occurred at the facility, agencies (e.g., the Department's Site Mitigation Branch, the Regional Water Quality Control Board, etc.) which required and/or oversaw the investigations, and agency contacts.

6. Potential Migration Pathways

6.1 Physical Properties of Contaminants

Identify the applicable physical properties for each contaminant that may influence how the contaminant moves in the environment. These properties could include melting point (degrees C), water solubility (mg/l), vapor pressure (mm Hg), Henry's law constant (atm-m3/mol), density (g/cc), dynamic viscosity (cp), kinematic viscosity (cs), octanol/water partition coefficient (log Kow), soil organic carbon/water partition coefficient (log koc) and soil/water partition coefficients. Include a table that summarizes the applicable physical properties for each contaminant.

6.2 Conceptual Model of Contaminant Migration

Develop a conceptual model of contaminant migration. The conceptual model consists of a working hypothesis of how the contaminants may move from the release source to the receptor population. The conceptual model is developed by looking at the applicable physical parameters for each contaminant and assessing how the contaminant may migrate given the existing site conditions (geologic features, depth to ground water, etc.).

Describe the phase (water, soil, gas, non-aqueous) and location where contaminants are likely to be found (e.g., if a ground water contaminant has a low water solubility and a high density, then the contaminant will likely sink and be found at the bottom of the aquifer, phase: non-aqueous). Include a discussion of potential transformation reactions that could impact the type and number of contaminants (i.e., what additional contaminants could be expected as a result of biotic and abiotic transformation reactions given the existing soil conditions).

A typical conceptual model should include a discussion similar to the following: "Benzene, ethylbenzene, toluene and xylenes are potential contaminants at the

facility. Based on their high vapor pressures and relatively low water solubilities (see Henry's law constant), the primary fate of these compounds in surface soils or surface water is expected to be volatilization to the atmosphere. These mono-cyclic aromatic hydrocarbons may leach from soils into groundwater. The log koc (soil organic carbon/water partition coefficient) values for these compounds ranges from 1.9 to 4.0, indicating that sorption to original matter in soils or sediments may occur only to a limited extent."

7. Potential Impacts of Existing Contamination

Describe the potential impacts on human health and the environment from any existing contamination and/or ongoing activities at the facility. This description must consider the possible impacts on sensitive ecosystems and endangered species as well as on local populations. Potential impacts from any releases to ground water, surface water, soil (including direct contact with contaminated surface soil) and air (including evaporation of volatile organic compounds from contaminated soil) must be discussed.

7.1 Ground Water Releases

Identify all wells (municipal, domestic, agricultural, industrial, etc.) within a 1 mile radius of the facility. Include a summary of available water sampling data for any identified municipal, industrial or domestic supply wells.

Develop a well inventory table that lists the following items for each identified well:

Well Designation
State ID
Reported Owner
Driller
Date of Completion
Original Use of Well
Current Use of Well
Drilling Method
Borehole Diameter (inches)
Casing Diameter (inches)
Perforated Interval (feet)
Gravel Pack Interval (feet)
Total Well Depth (feet)
Depth to Water (feet below ground surface)
Date of Water Level Measurement

If some of this information is not available, so indicate on the table with an "NA".

Include a regional map showing the facility, ground water flow direction (if known) and the location of all identified wells within a 1 mile radius of the facility.

Identify and describe any potential ground water discharge to surface water bodies.

Identify and list all relevant and applicable water standards for the protection of human health and the environment (e.g., maximum contaminant levels, water quality standards, etc).

7.2 Surface Water Releases

Discuss the facility's potential impact on surface water within a 2 mile radius of the facility. Describe the potential beneficial uses of the surface water (e.g., drinking water supply, recreational, agricultural, industrial, or environmentally sensitive). Identify all water supply intake points and contact areas within a 2 mile radius of the facility. Include a summary of the most recent water sampling data available for each of the identified water supply intake points. Include a description of the biota in surface water bodies on, adjacent to, or which can be potentially affected by the release. Also summarize any available sediment sampling data.

Include a regional map showing the facility, surface water flow direction, beneficial use areas, and the location of any identified water supply intake points or contact areas that are within a 2 mile radius of the facility.

7.3 Sensitive Ecosystems/Habitats

Discuss the facility's potential impact on sensitive ecosystems.

8. Interim Corrective Measures and Stabilization Assessment

Identify all corrective measures that were or are being undertaken at the facility to stabilize contaminant releases. Describe the objectives of the corrective measures including how the measure is mitigating a potential threat to human health and the environment. Summarize the design features of the corrective measure. Include a schedule for completing any ongoing or future work.

Identify and describe potential interim corrective measure alternatives that could be implemented immediately to stabilize any ongoing releases and/or prevent further migration of contaminants.

9. Data Needs

Assess the amount and quality of existing data concerning the facility and determine what additional information must be collected to meet the objectives of the RFI. This assessment must identify any additional information that may be needed to (1) support development of interim measures for early action and (2) adequately evaluate and compare corrective measures alternatives (e.g., field work, treatability studies, computer modeling, literature searches, vendor contacts, etc.). For example, if soil vapor extraction (SVE) is a likely option to address contamination at the facility, then the RFI should collect applicable field data to assess SVE (e.g., soil gas analysis, depth to ground water, etc.). The RFI Workplan must detail how this additional information will be collected.

10. References

Provide a list of references cited in the Current Condition Report.

B. RCRA Facility Investigation Workplan

The RCRA Facility Investigation (RFI) Workplan shall define the procedures necessary to:

- Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any ground water contamination in and around the facility (only required for releases to ground water);
- Characterize the geology and hydrogeology in and around the facility (only required for releases to ground water and possibly for releases to soil);
- Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any soil contamination in and around the facility (only required for releases to soil);
- Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any soil gas contamination in and around the facility (may be

required for releases to ground water and/or soil depending on the circumstances);

- Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any surface water contamination (includes surface water sediments) at the facility (only required for releases to surface water);

- Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any air releases at the facility (only required for air releases);

- Characterize any potential sources of contamination (required for all releases);

- Characterize the potential pathways of contaminant migration (required for all releases);

- Identify any actual or potential receptors (required for all releases);

- Gather all data to support a risk and/or ecological assessment (if required);

- Gather all necessary data to support interim corrective measures to stabilize ongoing releases and prevent further contaminant migration (required for all releases); and

- Gather all necessary data to support the Corrective Measures Study (required for all releases). This could include conducting pilot, laboratory and/or bench scale studies to assess the effectiveness of a treatment method.

The RFI Workplan shall describe all aspects of the investigation, including project management, sampling and analysis, well drilling and installation and quality assurance and quality control. If the scope of the investigation is such that more than one phase is necessary, the "Phase 1" RFI Workplan must include a summary description of each phase.

The required format for an RFI Workplan is described below:

1. Introduction

Briefly introduce the Workplan. Discuss the **[Order or Permit]** requiring the RFI and how the Workplan is organized.

2. Investigation Objectives

2.1 Project Objectives

Describe the overall objectives and critical elements of the RFI. State the general information needed from the site (e.g., soil chemistry, hydraulic conductivity of aquifer, stratigraphy, ground water flow direction, identification of potential receptors, etc.). The general information should be consistent with the objectives of the RFI and the data needs identified in the Current Conditions Report.

2.2 Data Quality Objectives

Provide data quality objectives that identify what data are needed and the intended use of the data.

3. Project Management

Describe how the investigation will be managed, including the following information:

- Organization chart showing key personnel, levels of authority and lines of communication;
- Project Schedule; and
- Estimated Project Budget.

Identify the individuals or positions who are responsible for: project management, field activities, laboratory analysis, database management, overall quality assurance, data validation, etc. Include a description of qualifications for personnel performing or directing the RFI, including contractor personnel.

4. Facility Background

Summarize existing contamination (e.g., contaminants, concentrations, etc.), local hydrogeologic setting and any other areas of concern at the facility. Include a map showing the general geographic location of the facility and a more detailed facility map showing the areas of contamination. Provide a reference to the Current Conditions Report and/or other applicable documents as a source of additional information.

5. Field Investigation

5.1 Task Description

Provide a qualitative description of each investigation task. Example tasks may include, but are not limited to the following:

Task 1: Surface Soil Sampling
Task 2: Subsurface Soil Boring
Task 3: Data Gathering to Support Interim Corrective Measures
Task 4: Monitoring Well Installation
Task 5: Aquifer Testing
Task 6: Ground Water Sampling
Task 7: Potential Receptor Identification
Task 8: Treatability Studies

5.2 Rationale for Sampling

Describe where all samples will be collected (location and depth), types of matrices that will be sampled and the analytical parameters. Explain the rationale for each sampling point, the total number of sampling points, and any statistical approach used to select these points. The conceptual model of contaminant migration developed in the Current Conditions Report should be considered when selecting sampling locations and depths. If some possible sampling points are excluded, explain why. Describe any field screening techniques that will be used to identify samples for laboratory analysis. Include the rationale for use of field screening techniques and criteria for sample selection.

5.2.1 Background Samples

Background samples should be analyzed for the complete set of parameters for each matrix; treat sediments, surface soils and subsurface soils as separate matrices. Background samples are collected, numbered, packaged, and sealed in the same manner as other samples. For long term and/or especially large projects, it is recommended that 10% of samples collected be from background locations.

5.3 Sample Analysis

List and discuss all analysis proposed for the project. Include a table that summarizes the following information

for each analysis to be performed:

- Analytical Parameters
- Analytical Method Reference Number (from EPA SW 846)
- Sample Preparation and/or Extraction Method Reference Number (from SW 846)
- Practical Quantitation Limits

Discuss the rationale for selection of the analytical parameters. The rationale must relate to site history and the RFI objectives. The achievable detection limits or quantitation limits stated in the selected methods must be adequate for valid comparisons of analytical results against any action levels or standards. For example, the objective may be to collect ground water data for comparison with Maximum Contaminant Levels (MCL's). If this were the case, it would be important to ensure that any ground water test methods had detection limits below the MCL's. Give an explanation if all samples from the same matrix will not be analyzed for the same parameters.

Provide the name(s) of the laboratory(s) that will be doing the analytical work. Indicate any special certifications or ratings of the laboratory. Describe the steps that will be taken to select and pre-qualify analytical laboratories to be used including any previous audits and/or other criteria. If a definite laboratory has not yet been selected, list at least 3 laboratories that are being considered for the analytical work.

5.4 Sample Collection Procedures

Describe how sampling points will be selected in the field, and how these locations will be documented and marked for future reference. If a sampling grid will be used, describe the dimensions and lay out planned for the grid.

Outline sequentially or step-by-step the procedure for collecting a sample for each matrix and each different sampling technique. Include a description of sampling equipment (including materials of construction), field measurements, sample preservation, housekeeping/cleanliness techniques and well purging procedures. The procedure described must ensure that a representative sample is collected, and that sample handling does not result in cross contamination or unnecessary loss of contaminants. Special care in sample handling for volatile organic samples must be addressed.

Describe how and when duplicates, blanks, laboratory quality control samples and background samples will be collected.

The Respondent must include sufficient maps and tables to fully describe the sampling effort. This shall include, at a minimum, a map showing all proposed sampling locations and tables that contain the following information:

Sample Collection Table

Sampling Location/Interval
Analytical Parameters (e.g., volatile organic compounds)
Analytical Method Number
Matrix
Preservation Method
Holding Times
Containers (quantity, size, type plus footnotes that discuss source and grade of containers)

Sample Summary Table

Sample Description/Area (include QC samples)
Analytical Parameters
Analytical Method Number
Preparation or Extraction Method Number
Matrix
Number of Sample Sites
Number of Analyses

5.4.1 Equipment Decontamination

Describe the decontamination procedure for all drilling and sampling equipment (including metal sleeves).

The following is a recommended generic procedure for decontamination of sampling equipment:

- Wash with non-phosphate detergent
- Tap water rinse
- 0.1M nitric acid rinse (when cross contamination from metals is a concern)
- Deionized/distilled water rinse
- Pesticide grade solvent rinse (when semivolatiles and non-volatile organic contamination may be present)
- Deionized/distilled water rinse (twice)
- Organic free water rinse (HPLC grade)

The above procedure is not appropriate for every

field condition. Clearly document the decontamination procedures.

5.4.2 Equipment Calibration and Maintenance

Logbooks or pre-formatted calibration worksheets should be maintained for major field instruments, to document servicing, maintenance and instrument modification. The calibration, maintenance and operating procedures for all instruments, equipment and sampling tools must be based upon manufacturer's instructions. List all field equipment to be used, specify the maintenance/calibration frequency for each instrument and the calibration procedures (referenced in text and included in appendices).

5.4.3 Sample Packaging and Shipment

Describe how samples will be packaged and shipped. All applicable Department of Transportation regulations must be followed.

5.4.4 Sample Documentation

Discuss the use of all paperwork including field notebooks, record logs, photographs, sample paperwork, and Chain of Custody forms (include a blank copy in RFI Workplan Appendices) and seals.

Describe how sample containers will be labeled and provide an example label if available. At a minimum, each sample container label should include: project ID, sample location, analytical parameters, date sampled and any preservative added to the sample.

A bound field log book must be maintained by the sampling team to provide a daily record of events. Field log books shall provide the means of recording all data regarding sample collection. All documentation in field books must be made in permanent ink. If an error is made, corrections must be made by crossing a line through the error and entering the correct information. Changes must be initialed, no entries shall be obliterated or rendered unreadable. Entries in the log book must include, at a minimum, the following for each day's sampling:

Date
Starting Time

Meteorological Conditions
Field Personnel Present
Level of Personal Protection
Site Identification
Field Observations/Parameters
Sample Identification Numbers
Location and Description of Sampling Points
Number of Samples Collected
Time of Sample Collection
Signature of Person Making the Entry

5.4.5 Disposal of Contaminated Materials

Describe the storage and disposal methods for all contaminated cuttings, well development and purge water, disposable equipment, decontamination water, and any other contaminated materials. The waste material must be disposed of in a manner consistent with local, state and federal regulations.

5.4.6 Standard Operating Procedures

If Standard Operating Procedures (SOPs) are referenced, the relevant procedure must be summarized in the RFI Workplan. The SOP must be specific to the type of tasks proposed and be clearly referenced in the RFI Workplan. The SOP must also be directly applicable, as written, to the RFI Workplan; otherwise, modifications to the SOP must be discussed. Include the full SOP description in the RFI Workplan appendix.

5.5 Well Construction and Aquifer Testing

When new monitoring wells (or piezometers) are proposed, describe the drilling method, well design and construction details (e.g., depth of well, screen length, slot size, filter pack material, etc.) and well development procedures. Describe the rationale for proposed well locations and selection of all well design and construction criteria (i.e., provide rationale for selection of slot size and screen length).

When aquifer testing is proposed, describe the testing procedures, flow rates, which wells are involved, test periods, how water levels will be measured, and any other pertinent information.

6. Quality Assurance and Quality Control

Quality control checks of field and laboratory sampling and analysis serve two purposes: to document the data quality, and to identify areas of weakness within the measurement process which need correction.

Include a summary table of data quality assurance objectives that, at a minimum, lists:

- Analysis Group (e.g., volatile organic compounds)
- Matrix
- Practical Quantitation Limits (PQL)
- Spike Recovery Control Limits (%R)
- Duplicate Control Limits +/-(RPD)
- QA Sample Frequency

A reference may note the specific pages from USEPA's SW 846 Guidance Document that list the test method objectives for precision and accuracy. If the field and laboratory numerical data quality objectives for precision are the same and presented on a single table, then a statement should be made to this effect and added as a footnote to the table (e.g., "These limits apply to both field and laboratory duplicates"). Include a copy of the analytical laboratory quality assurance/quality control plan in the appendices of the RFI Workplan and provide the equations for calculating precision and accuracy.

6.1 Field Quality Control Samples

6.1.1 Field Duplicates

Duplicates are additional samples that must be collected to check for sampling and analytical precision. Duplicate samples for all parameters and matrices must be collected at a frequency of at least one sample per week or 10 percent of all field samples, whichever is greater.

Duplicates should be collected from points which are known or suspected to be contaminated. For large projects, duplicates should be spread out over the entire site and collected at regular intervals.

Duplicates must be collected, numbered, packaged, and sealed in the same manner as other samples; duplicate samples are assigned separate sample numbers and submitted blind to the laboratory.

6.1.2 Blank Samples

Blanks are samples that must be collected to check

for possible cross-contamination during sample collection and shipment and in the laboratory. Blank samples should be analyzed for all parameters being evaluated. At least one blank sample per day must be done for all water and air sampling. Additionally, field blanks are required for soil sampling if non-dedicated field equipment is being used for sample collection.

Blank samples must be prepared using analytically-certified organic-free (HPLC-grade) water for organic parameters and metal-free (deionized-distilled) water for inorganic parameters. Blanks must be collected, numbered, packaged, and sealed in the same manner as other samples; blank samples are assigned separate sample numbers and submitted blind to the laboratory. The following types of blank samples may be required:

Equipment Blank: An equipment blank must be collected when sampling equipment (e.g., bladder pump) or a sample collection vessel (e.g., a bailer or beaker) is decontaminated and reused in the field. Use the appropriate "blank" water to rinse the sampling equipment after the equipment has been decontaminated and then collect this water in the proper sample containers.

Field Bottle Blank: This type of blank must be collected when sampling equipment decontamination is not necessary. The field bottle blank is obtained by pouring the appropriate "blank" water into a container at a sampling point.

6.2 Laboratory Quality Control Samples

Laboratories routinely perform matrix spike and laboratory duplicate analysis on field samples as a quality control check. A minimum of one field sample per week or 1 per 20 samples (including field blanks and duplicates), whichever is greater, must be designated as the "Lab QC Sample" for the matrix and laboratory duplicate analysis.

Laboratory quality control samples should be selected from sampling points which are suspected to be moderately contaminated. Label the bottles and all copies of the paperwork as "Lab QC Sample"; the laboratory must know that this sample is for their QC analyses. The first laboratory QC sample of the sampling effort should be part of the first or second day's shipment. Subsequent laboratory QC samples should be spread out over the

entire sampling effort.

For water matrices, 2-3 times the normal sample volume must be collected for the laboratory QC sample. Additional volume is usually not necessary for soil samples.

6.3 Performance System Audits by the Respondent

This section should describe any internal performance and/or system audit which the Owner/Operator will conduct to monitor the capability and performance of the project. The extent of the audit program should reflect the data quality needs and intended data uses. Audits are used to quickly identify and correct problems thus preventing and/or reducing costly errors. For example, a performance audit could include monitoring field activities to ensure consistency with the workplan. If the audit strategy has already been addressed in a QA program plan or standard operating procedure, cite the appropriate section which contains the information.

7. Data Management

Describe how investigation data and results will be evaluated, documented and managed, including development of an analytical database. State the criteria that will be used by the project team to review and determine the quality of data. To document any quality assurance anomalies, the RFI QC Summary Forms (see Appendix A of this attachment) must be completed by the analytical laboratory and submitted as part of the RFI Report. In addition, provide examples of any other forms or checklists to be used.
Identify and discuss personnel and data management responsibilities, all field, laboratory and other data to be recorded and maintained, and any statistical methods that may be used to manipulate the data.

8. References

Provide a list of references cited in the RFI Workplan.

C. RCRA Facility Investigation Report

An RFI Report must be prepared that describes the entire site investigation and presents the basic results. The RFI Report must clearly present an evaluation of investigation results (e.g., all potential contaminant source areas must be identified, potential migration pathways must be described, and affected media shown, etc.).

The RFI Report must also include an evaluation of the completeness of the investigation and indicate if additional work is needed. This work could include additional investigation activities and/or interim corrective measures to stabilize contaminant release areas and limit contaminant migration. If additional work is needed, the Owner/Operator must submit a Phase 2 RFI Workplan and/or Interim Corrective Measures Workplan must be submitted to the Department along with the RFI Report.

At a minimum, the RFI Report must include:

- A summary of investigation results (include tables that summarize analytical results).
- A complete description of the investigation, including all data necessary to understand the project in its entirety including all investigative methods and procedures.
- A discussion of key decision points encountered and resolved during the course of the investigation.
- Graphical displays such a isopleths, potentiometric surface maps, cross-sections, plume contour maps (showing concentration levels, isoconcentration contours), facility maps (showing sample locations, etc.) and regional maps (showing receptor areas, water supply wells, etc.) that describe report results. Highlight important facts such as geologic features that may affect contaminant transport.
- Tables that list all chemistry data for each matrix investigated.
- An analysis of current and existing ground water data to illustrate temporal changes for both water chemistry and piezometric data (use graphics whenever possible).
- A description of potential or known impacts on human and environmental receptors from releases at the

facility. Depending on the site specific circumstances, this analysis could be based on the results from contaminant dispersion models.

- A discussion of any upset conditions that occurred during any sampling events or laboratory analysis that may influence the results. The discussion must include any problems with the chain of custody procedures, sample holding times, sample preservation, handling and transport procedures, field equipment calibration and handling, field blank results that show potential sample contamination and any field duplicate results that indicate a potential problem. Summary tables must be provided that show the upset condition and the samples that could be impacted. The RFI QC Summary Forms (see Appendix A of this attachment) must be completed by the analytical laboratory and submitted as part of the RFI Report.

- Assessment of the entire QA/QC program effectiveness.

In addition to the RFI Report, the Department may require the Owner/Operator to submit the analytical results (database) on a floppy disk (Department will specify the format). All raw laboratory and field data (e.g., analytical reports) must be kept at the facility and be made available or sent to the Department upon request.

D. Health and Safety Plan

1. Objectives

Describe the goals and objectives of the RFI Health and Safety plan (must apply to on-site personnel and visitors). The Health and Safety Plan must be consistent with the facility Contingency Plan, OSHA Regulations, NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985), all state and local regulations and other Department guidance as provided.

2. Hazard Assessment

List and describe the potentially hazardous substances that could be encountered by field personnel during investigation activities. Discuss the following:

- Inhalation Hazards
- Dermal Exposure
- Ingestion Hazards
- Physical Hazards
- Overall Hazard Rating

Include a table that, at a minimum, lists: known contaminants, highest observed concentration, media, symptoms/effects of acute exposure.

3. Personal Protection/Monitoring Equipment

For each investigation task, describe personal protection levels and identify all monitoring equipment. Describe any action levels and corresponding response actions (i.e., when will levels of safety be upgraded). Describe decontamination procedures and areas.

4. Site Organization and Emergency Contacts

List and identify all contacts (include phone numbers). Identify the nearest hospital and provide a regional map showing the shortest route from the facility to the hospital. Describe site emergency procedures and any site safety organizations. Include evacuation procedures for neighbors (where applicable).

Include a facility Map showing emergency station locations (first aid, eye wash areas, etc.).

ATTACHMENT E

SCOPE OF WORK FOR A CORRECTIVE MEASURES STUDY

PURPOSE

The purpose of the Corrective Measures Study (CMS) is to:

1. Develop and evaluate corrective measure alternatives (or a single corrective measure) that may be taken at the Facility to address releases of hazardous wastes (including hazardous constituents); and

2. Recommend the corrective measures to be taken at the Facility that are protective of human health and the environment.

SCOPE

A Corrective Measures Study Workplan and Corrective Measures Study Report are, unless otherwise specified by the Department of Toxic Substances Control (Department), required elements of the CMS. The Scope of Work (SOW) for the Corrective Measures Study Workplan and Report describe what should be included in each document. The SOW's are intended to be flexible documents capable of addressing both simple and complex site situations. If the Owner/Operator or Respondent can justify, to the satisfaction of the Department, that sections of a plan and/or report are not needed in the given site specific situation, then the Department may waive that requirement.

The Department may require the Owner/Operator or Respondent to conduct additional studies beyond what is discussed in the SOW's in order to support the CMS. The Owner/Operator or Respondent will furnish all personnel, materials and services necessary to conduct the additional tasks. The SOW for the Corrective Measures Study Workplan and Report are specified below:

A. Corrective Measures Study Workplan

The Corrective Measures Study (CMS) Workplan shall, at a minimum, include the following elements:

1. A description of the overall purpose of the Corrective Measure Study;

2. Corrective measure objectives including proposed

media cleanup standards (promulgated federal and state standards, risk derived standards) and points of compliance;

3. A description of the specific corrective measure technologies and/or corrective measure alternatives which will be studied;

4. A description of the general approach to investigating and evaluating potential corrective measures;

5. A summary description of any proposed pilot, laboratory and/or bench scale studies. Proposed studies must be further detailed in either the CMS Workplan or in separate workplans. Submittal times for separate workplans must be included in the CMS Workplan project schedule;

6. A proposed outline for the CMS Report including a description of how information will be presented;

7. A description of overall project management including overall approach, levels of authority (include organization chart), lines of communication, budget and personnel. Include a description of qualifications for personnel directing or performing the work; and

8. A project schedule that specifies all significant steps in the process and when key documents (e.g., CMS Report) are to be submitted to the Department.

B. Corrective Measures Study Report

The Corrective Measures Study (CMS) Report shall, at a minimum, include the following elements:

1. Introduction/Purpose

Describe the purpose and intent of the document.

2. Description of Current Conditions

The Owner/Operator or Respondent shall include a brief discussion of any new information that has been developed since the RCRA Facility Investigation Report was finalized. This discussion should concentrate on those issues which could significantly affect the evaluation and selection of the corrective measure alternative(s).

3. Corrective Action Objectives

The Owner/Operator or Respondent shall propose corrective action objectives including applicable media cleanup standards. The corrective action objectives must be based on available promulgated federal and state cleanup standards, risk derived standards, data and information gathered during the corrective action process (e.g., from interim measures, RCRA Facility Investigation, etc.), and/or other applicable guidance documents. If no specific standards exist for a given contaminant and media, the Owner/Operator or Respondent shall propose and justify a media cleanup standard. The Department may require that the Owner/Operator or Respondent conduct a risk assessment to develop appropriate cleanup standards.

4. Identification and Screening of Corrective Measure Technologies

a. Identification

List and briefly describe potentially applicable technologies for each affected media that may be used to achieve the corrective action objectives. The Owner/Operator or Respondent should consider including a table that summarizes the available technologies.

The Owner/Operator or Respondent should consider innovative treatment technologies, especially in situations where there are a limited number of applicable corrective measure technologies. Innovative technologies are defined as those technologies for source control other than incineration, solidification/stabilization and pumping with conventional treatment for contaminated groundwater. Innovative treatment technologies may require extra initial effort to gather information, analyze options and to adapt the technology to site specific situations. However, in the long run, innovative treatment technologies could be more cost effective. Pilot, laboratory and/or bench scale studies are useful for evaluating innovative treatment technologies. Depending on the site-specific situation, the Department may require the Owner/Operator or Respondent to consider additional technologies.

b. Screening

Technologies must be screened to eliminate those that may prove unfeasible to implement given the existing set of waste and site-specific conditions. The

screening is accomplished by evaluating technology limitations (e.g., for volume, area, contaminant concentrations, interferences, etc.) and using contaminant and site characterization information from the RCRA Facility Investigation to screen out technologies that cannot be fully implemented at the facility. The screening process must focus on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions (e.g., depth to groundwater and aquitards).

As with all decisions during the CMS, the screening of technologies must be fully documented. This is especially true if the screening step indicates that only one corrective action technology should proceed to the next step and be evaluated in detail. List the corrective action technologies selected for further evaluation. Also document the reasons for excluding any corrective action technologies. The Owner/Operator or Respondent should consider including a table that summarizes the findings.

5. Corrective Measure Alternative Development

Assemble the technologies that pass the screening step into specific alternatives that have potential to meet the corrective action objectives. Options for addressing less complex sites could be relatively straightforward and may only require evaluation of a single or limited number of alternatives.

Each alternative may consist of an individual technology or a combination of technologies used in sequence (e.g., treatment train). Depending on the site specific situation, different alternatives may be considered for separate areas of the facility. List and briefly describe each corrective measure alternative.

6. Evaluation of Corrective Measure Alternatives

Each corrective measure alternative must be evaluated (including its components) based on Short- and Long-Term Effectiveness, Reduction of Toxicity, Mobility and/or Volume, Long Term Reliability, Implementability, and Preliminary Cost.

a. Short-and Long-Term Effectiveness

Each corrective measure alternative must be evaluated for effectiveness in protecting human health and the environment and meeting the corrective action

objectives. Both short- and long-term components of effectiveness must be evaluated; short-term referring to the construction and implementation period, and long-term referring to the period after the remedial action is complete. Estimate approximately how much time it will take to implement each corrective measure alternative, how much time to see initial beneficial results, and how much time to achieve the corrective action objectives.

The evaluation of short-term effectiveness must include possible threats to the safety of nearby communities, workers, and environmentally sensitive areas (e.g., oceans, wetlands) during construction of the corrective measure alternative. Factors to consider are fire, explosion, exposure to hazardous substances and potential threats associated with treatment, excavation, transportation and re-disposal or containment of waste material. Laboratory and/or field studies are extremely useful in estimating the effectiveness of corrective measures and should be used whenever possible.

The evaluation of long-term effectiveness must include possible threats to the safety of nearby communities, workers, and environmentally sensitive areas (e.g., oceans, wetlands) during operation of the corrective measure alternative.

b. Reduction of Toxicity, Mobility and/or Volume

Each corrective measure alternative must be evaluated for its ability to reduce the toxicity, mobility, and/or volume of the contaminated media. Reduction in toxicity, mobility, and/or volume refers to changes in one or more characteristics of the contaminated media by the use of corrective measures that decrease the inherent threats associated with the media.

Estimate how much the corrective measure alternative will reduce the waste toxicity, volume and/or mobility (compare initial site conditions to post-corrective measure conditions). In general, corrective measures that have a high degree of permanence and reduce the contaminant toxicity, mobility and volume through treatment.

c. Long-Term Reliability

Each corrective measure alternative must be evaluated as to its long-term reliability. This evaluation

includes consideration of operation and maintenance requirements.

Demonstrated and expected reliability is a way of assessing the risk and effect of failure. Discuss whether the technology or combination of technologies have been used effectively together under analogous site conditions, whether failure of any one technology in the alternative has an impact on receptors or contaminant migration, and whether the alternative would have the flexibility to deal with uncontrollable changes at the site (e.g., heavy rain storms, earthquakes, etc).

Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements must also be considered.

Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure alternative shall be evaluated in terms of the projected useful life of the overall alternative and of its component technologies. Useful life is defined as the length of time the necessary or required level of effectiveness can be maintained.

d. <u>Implementability of Corrective Measure Alternatives</u>

The implementability criterion addresses the technical and administrative feasibility of implementing a corrective measure alternative and the availability of various services and materials needed during implementation. Each corrective measure alternative must be evaluated using the following criteria:

Construction and Operation: Corrective measure alternatives must be feasible to implement given the existing set of waste and site-specific conditions. This evaluation was initially done for specific technologies during the screening process and is addressed again in this detailed analysis of the alternative as a whole. It is not intended that the screening process be repeated here, but instead to highlight key differences and/or changes from the

screening analysis that may result from combining technologies.

Administrative Feasibility: Discuss the administrative activities needed to implement the corrective measure alternative (e.g., permits, public acceptance, rights of way, off-site approvals, etc.).

Availability of Services and Materials: Discuss the availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials, and the availability of prospective technologies for each corrective measure alternative.

e. Preliminary Cost Estimates

Develop a preliminary cost estimate for each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs. Include a description of how the costs were estimated and what assumptions were used.

- The preliminary capital cost estimate must consider all key costs including, at a minimum, costs for engineering, mobilization, demobilization, site preparation, construction, materials, labor, equipment purchase and rental, sampling, analysis, waste disposal, permitting and health and safety measures.

- The preliminary operation and maintenance cost estimate must consider all key costs including, at a minimum, costs for labor, training, sampling, analysis, maintenance materials, utilities, waste disposal, waste treatment, permitting and health and safety measures.

- Calculate the net present value of preliminary capital and operation and maintenance costs for each corrective measure alternative.

7. Recommendation and Justification of the Corrective Measure Alternative

The Owner/Operator or Respondent shall recommend and justify a corrective measure alternative using the five criteria specified in Section 6. This recommendation shall include summary tables which allow the alternative or alternatives to be easily understood. Tradeoffs among implementability, effectiveness, reliability, and other pertinent factors

shall be highlighted.

In addition, the recommended corrective measure alternative(s) must meet the following corrective action standards:

a. Protect human health and the environment;

b. Attain corrective action objectives including media cleanup standards;

c. Control the source(s) of releases so as to reduce or eliminate, to the extent practicable, further releases of hazardous wastes (including hazardous constituents) that may pose a threat to human health and the environment; and

d. Comply with any applicable federal, state, and local standards for management of wastes.

The Owner/Operator or Respondent must document how the recommended alternative meets the corrective action standards (a-d above).

8. **Summary of Recommended Corrective Measure Alternative**

Provide a description of the recommended corrective measure alternative and qualitatively describe what the alternative is supposed to do and how it will function at the facility.

ATTACHMENT F

SCOPE OF WORK FOR CORRECTIVE MEASURES IMPLEMENTATION

PURPOSE

The purpose of the Corrective Measures Implementation (CMI) program is to design, construct, operate, maintain and monitor the performance of the corrective measure or measures selected by the Department. Corrective measures are intended to protect human health and/or the environment from hazardous waste releases from the Facility. The Owner/Operator or Respondent will furnish all personnel, materials and services necessary to implement the corrective measures program.

SCOPE

The documents required for Corrective Measures Implementation are, unless the Department of Toxic Substances Control (Department) specifies otherwise, a Conceptual Design, Operation and Maintenance Plan, Draft Plans and Specifications, Final Plans and Specifications, Construction Workplan, Construction Completion Report, Corrective Measure Completion Report, Health and Safety Plan and Progress Reports. The scope of work (SOW) for each document is specified below. The SOW's are intended to be flexible documents capable of addressing both simple and complex site situations. If the Owner/Operator or Respondent can justify, to the satisfaction of the Department, that a plan and/or report or portions thereof are not needed in the given site specific situation, then the Department may waive that requirement.

The Department may require the Owner/Operator or Respondent to conduct additional studies beyond what is discussed in the SOW's in order to support the CMI program. The Owner/Operator or Respondent will furnish all personnel, materials and services necessary to conduct the additional tasks.

A. Conceptual Design

The Owner/Operator or Respondent shall prepare a Conceptual Design (CD) that clearly describes the size, shape, form, and content of the proposed corrective measure, the key components or elements that are needed, describes the designers vision of the corrective measure in the form of conceptual drawings and schematics, and includes procedures

and schedules for implementing the corrective measure(s).

It should be noted that more that one conceptual design may be needed in situations where there is a complex site with multiple technologies being employed at different locations. The CD must be approved by the Department prior to implementation. The CD must, at a minimum, include the following elements:

1. Introduction/Purpose

   Describe the purpose of the document and provide a summary description of the project.

2 Corrective Measure Objectives

   Discuss the corrective measure objectives including applicable media cleanup standards.

3. Conceptual Model of Contaminant Migration

   It is important to know where the contaminants are and to understand how they are moving before an adequate corrective measure can be developed. To address this critical question, the Owner/Operator or Respondent must present a conceptual model of the site and contaminant migration. The conceptual model consists of a working hypothesis of how the contaminants may move from the release source to the receptor population. The conceptual model is developed by looking at the applicable physical parameters (e.g., water solubility, density, Henry's Law Constant, etc.) for each contaminant and assessing how the contaminant may migrate given the existing site conditions (geologic features, depth to groundwater, etc.). Describe the phase (water, soil, gas, non-aqueous) and location where contaminants are likely to be found. This analysis may have already been done as part of earlier work (e.g., Current Conditions Report). If this is the case, then provide a summary of the conceptual model with a reference to the earlier document;

4. Description of Corrective Measures

   Considering the conceptual model of contaminant migration, qualitatively describe what the corrective measure is supposed to do and how it will function at the Facility. Discuss the constructability of the corrective measure and its ability to meet the corrective measure objectives.

5. Data Sufficiency

Review existing data needed to support the design effort and establish whether or not there are sufficient accurate data available for this purpose. The Owner/Operator or Respondent must summarize the assessment findings and specify any additional data needed to complete the corrective measure design. The Department may require or the Owner/Operator or Respondent may propose that sampling and analysis plans and/or treatability study workplans be developed to obtain the additional data. Submittal times for any new sampling and analysis plans and/or treatability study workplans must be included in the project schedule.

6. Project Management

Describe the management approach including levels of authority and responsibility (include organization chart), lines of communication and the qualifications of key personnel who will direct the corrective measure design and implementation effort (including contractor personnel).

7. Project Schedule

The project schedule must specify all significant steps in the process and when all CMI deliverables (e.g., Operation and Maintenance Plan, Corrective Measure Construction Workplan, etc.) are to be submitted to the Department.

8. Design Criteria

Specify performance requirements for the overall corrective measure and for each major component. The Owner/Operator or Respondent must select equipment that meets the performance requirements.

9. Design Basis

Discuss the process and methods for designing all major components of the corrective measure. Discuss the significant assumptions made and possible sources of error. Provide justification for the assumptions;

10. Conceptual Process/Schematic Diagrams.

11. Site plan showing preliminary plant layout and/or treatment area.

12. Tables listing number and type of major components with approximate dimensions.

13. Tables giving preliminary mass balances.

14. Site safety and security provisions (e.g., fences, fire control, etc.).

15. Waste Management Practices

    Describe the wastes generated by the construction of the corrective measure and how they will be managed. Also discuss drainage and indicate how rainwater runoff will be managed;

16. Required Permits

    List and describe the permits needed to construct and operate the corrective measure. Indicate on the project schedule when the permit applications will be submitted to the applicable agencies and an estimate of the permit issuance date.

17. Long-Lead Procurement Considerations

    The Owner/Operator or Respondent shall prepare a list of any elements or components of the corrective measure that will require custom fabrication or for some other reason must be considered as long-lead procurement items. The list must include the reason why the items are considered long-lead items, the length of time necessary for procurement, and recognized sources of such procurement;

18. Appendices including:

    Design Data - Tabulations of significant data used in the design effort;

    Equations - List and describe the source of major equations used in the design process;

    Sample Calculations - Present and explain one example calculation for significant or unique design calculations; and

    Laboratory or Field Test Results.

B. Operation and Maintenance Plan

The Owner/Operator or Respondent shall prepare an Operation and Maintenance (O&M) Plan that includes a strategy and procedures for performing operations, long term maintenance, and monitoring of the corrective measure. A draft Operation and Maintenance Plan shall be submitted to the Department simultaneously with the draft Plans and Specifications. A final Operation and Maintenance Plan shall be submitted to the Department simultaneously with the final Plans and Specifications. The O&M plan shall, at a minimum, include the following elements:

1. Introduction/Purpose

   Describe the purpose of the document and provide a summary description of the project.

2. Project Management

   Describe the management approach including levels of authority and responsibility (include organization chart), lines of communication and the qualifications of key personnel who will operate and maintain the corrective measures (including contractor personnel);

3. System Description

   Describe the corrective measure and identify significant equipment.

4. Personnel Training

   Describe the training process for O&M personnel. The Owner/Operator or Respondent shall prepare, and include in the technical specifications governing treatment systems, contractor requirements for providing: appropriate service visits by experienced personnel to supervise the installation, adjustment, start up and operation of the treatment systems, and training covering appropriate operational procedures once the start-up has been successfully accomplished.

5. Start-Up Procedures

   Describe system start-up procedures including any operational testing.

6. Operation and Maintenance Procedures

   Describe normal operation and maintenance procedures

including:

a. Description of tasks for operation;
b. Description of tasks for maintenance;
c. Description of prescribed treatment or operation conditions; and
d. Schedule showing frequency of each O&M task.

7. Replacement schedule for equipment and installed components.

8. Waste Management Practices

Describe the wastes generated by operation of the corrective measure and how they will be managed. Also discuss drainage and indicate how rainwater runoff will be managed.

9. Sampling and monitoring activities may be needed for effective operation and maintenance of the corrective measure. If sampling activities are necessary, the O&M plan must include a complete sampling and analysis section which specifies the following information:

a. Description and purpose of monitoring tasks;
b. Data quality objectives;
c. Analytical test methods and detection limits;
d. Name of analytical laboratory;
e. Laboratory quality control (include laboratory QA/QC procedures in appendices)
f. Sample collection procedures and equipment;
g. Field quality control procedures:
    - o duplicates (10% of all field samples)
    - o blanks (field, equipment, etc.)
    - o equipment calibration and maintenance
    - o equipment decontamination
    - o sample containers
    - o sample preservation
    - o sample holding times (must be specified)
    - o sample packaging and shipment
    - o sample documentation (field notebooks, sample labeling, etc);
h. Criteria for data acceptance and rejection; and
i. Schedule of monitoring frequency.

The Owner/Operator or Respondent shall follow all EPA guidance for sampling and analysis. The Department may request that the sampling and analysis section be a separate document.

10. Corrective Measure Completion Criteria

Describe the process and criteria (e.g., groundwater cleanup goal met at all compliance points for 1 year) for determining when corrective measures may cease. Also describe the process and criteria for determining when maintenance and monitoring may cease. Criteria for corrective measures such as a landfill cap must be carefully crafted to account for the fact that a landfill cap will never actually "cease" but will need to be maintained and monitored for a long period of time. Satisfaction of the completion criteria will trigger preparation and submittal of the Corrective Measures Completion Report.

11. O&M Contingency Procedures:

a. Procedures to address system breakdowns and operational problems including a list of redundant and emergency back-up equipment and procedures;

b. Should the corrective measure suffer complete failure, specify alternate procedures to prevent release or threatened releases of hazardous substances, pollutants or contaminants which may endanger public health and/or the environment or exceed cleanup standards;

c. The O&M Plan must specify that, in the event of a major breakdown and/or complete failure of the corrective measure (includes emergency situations), the Owner/Operator or Respondent will orally notify the Department within 24 hours of the event and will notify the Department in writing within 72 hours of the event. The written notification must, at a minimum, specify what happened, what response action is being taken and/or is planned, and any potential impacts on human health and/or the environment; and

d. Procedures to be implemented in the event that the corrective measure is experiencing major operational problems, is not performing to design specifications and/or will not achieve the cleanup goals in the expected timeframe. For example, in certain circumstances both a primary and secondary corrective measure may be selected for the Facility. If the primary corrective measure were to fail, then the secondary would be implemented. This section would thus specify that if the primary corrective measure failed, then design plans would be developed for the secondary measure.

12. Data Management and Documentation Requirements

Describe how analytical data and results will be evaluated, documented and managed, including development of an analytical database. State the criteria that will be used by the project team to review and determine the quality of data.

The O&M Plan shall specify that the Owner/Operator or Respondent collect and maintain the following information:

a. Progress Report Information

- o Work Accomplishments (e.g., performance levels achieved, hours of treatment operation, treated and/or excavated volumes, concentration of contaminants in treated and/or excavated volumes, nature and volume of wastes generated, etc.).

- o Record of significant activities (e.g., sampling events, inspections, problems encountered, action taken to rectify problems, etc.).

b. Monitoring and laboratory data;
c. Records of operating costs; and
d. Personnel, maintenance and inspection records.

These data and information should be used to prepare Progress Reports and the Corrective Measure Completion Report.

C. Draft Plans and Specifications

The Owner/Operator or Respondent shall prepare draft Plans and Specifications that are based on the Conceptual Design but include additional design detail. A draft Operation and Maintenance Plan and Construction Workplan shall be submitted to the Department simultaneously with the draft Plans and Specifications. The draft design package must include drawings and specifications needed to construct the corrective measure. Depending on the nature of the corrective measure, many different types of drawings and specifications may be needed. Some of the elements that may be required are:

- General Site Plans
- Process Flow Diagrams
- Mechanical Drawings
- Electrical Drawings
- Structural Drawings
- Piping and Instrumentation Diagrams
- Excavation and Earthwork Drawings
- Equipment Lists
- Site Preparation and Field Work Standards
- Preliminary Specifications for Equipment and Material

General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the project specifications to the Department, the Owner/Operator or Respondent shall:

a. Proofread the specifications for accuracy and consistency with the conceptual design; and

b. Coordinate and cross-check the specifications and drawings.

D. Final Plans and Specifications (100% Design Point)

The Owner/Operator or Respondent shall prepare final Plans and Specifications that are sufficient to be included in a contract document and be advertised for bid. A final Operation and Maintenance Plan and Construction Workplan shall be submitted to the Department simultaneously with the final Plans and Specifications. The final design package must consist of the detailed drawings and specifications needed to construct the corrective measure. Depending on the nature of the corrective measure, many different types of drawings and specifications may be needed. Some of the elements that may be required are:

- General Site Plans
- Process Flow Diagrams
- Mechanical Drawings
- Electrical Drawings
- Piping and Instrumentation Diagrams
- Structural Drawings
- Excavation and Earthwork Drawings
- Site Preparation and Field Work Standards
- Construction Drawings
- Installation Drawings
- Equipment Lists
- Detailed Specifications for Equipment and Material

General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the final project specifications to the Department, the Owner/Operator or Respondent shall:

a. Proofread the specifications for accuracy and consistency with the preliminary design; and

b. Coordinate and cross-check the specifications and drawings.

E. Construction Workplan

The Owner/Operator or Respondent shall prepare a Construction Workplan which documents the overall management strategy, construction quality assurance procedures and schedule for constructing the corrective measure. A draft Construction Workplan shall be submitted to the Department simultaneously with the draft Plans and Specifications and draft Operation and Maintenance Plan. A final Construction Workplan shall be submitted to the Department simultaneously with the final Plans and Specifications and final Operation and Maintenance Plan. Upon receipt of written approval from the Department, the Owner/Operator or Respondent shall commence the construction process and implement the Construction Workplan in accordance with the schedule and provisions contained therein. The Construction Workplan must be approved by the Department prior to the start of corrective measure construction. The Construction Workplan must, at a minimum, include the following elements:

1. Introduction/Purpose

   Describe the purpose of the document and provide a summary description of the project.

2. Project Management

   Describe the construction management approach including levels of authority and responsibility (include organization chart), lines of communication and the qualifications of key personnel who will direct the corrective measure construction effort and provide construction quality assurance/quality control (including contractor personnel);

3. Project Schedule

   The project schedule must include timing for key elements of the bidding process, timing for initiation and completion of all major corrective measure construction tasks as specified in the Final Plans and Specifications, and specify when the Construction Completion Report is to be submitted to the Department;

4. Construction Quality Assurance/Quality Control Program

   The purpose of construction quality assurance is to ensure, with a reasonable degree of certainty, that a completed corrective measure will meet or exceed all design criteria, plans and specifications. The Construction Workplan must include a complete

construction quality assurance program to be implemented by the Owner/Operator or Respondent.

5. Waste Management Procedures

Describe the wastes generated by construction of the corrective measure and how they will be managed.

6. Sampling and Analysis

Sampling and monitoring activities may be needed for construction quality assurance/quality control and/or other construction related purposes. If sampling activities are necessary, the Construction Workplan must include a complete sampling and analysis section which specifies the following information:

a. Description and purpose of monitoring tasks;
b. Data quality objectives;
c. Analytical test methods and detection limits;
d. Name of analytical laboratory;
e. Laboratory quality control (include laboratory QA/QC procedures in appendices)
f. Sample collection procedures and equipment;
g. Field quality control procedures:
    - o duplicates (10% of all field samples)
    - o blanks (field, equipment, etc.)
    - o equipment calibration and maintenance
    - o equipment decontamination
    - o sample containers
    - o sample preservation
    - o sample holding times (must be specified)
    - o sample packaging and shipment
    - o sample documentation (field notebooks, sample labeling, etc);
h. Criteria for data acceptance and rejection; and
i. Schedule of monitoring frequency.

The Owner/Operator or Respondent shall follow all Department and USEPA guidance for sampling and analysis. The Department may request that the sampling and analysis section be a separate document.

7. Construction Contingency Procedures

a. Changes to the design and/or specifications may be needed during construction to address unforeseen problems encountered in the field. Procedures to address such circumstances, including notification of the Department, must be included in the Construction Workplan;

b. The Construction Workplan must specify that, in the event of a construction emergency (e.g., fire, earthwork failure, etc.), the Owner/Operator or Respondent will orally notify the Department within 24 hours of the event and will notify the Department in writing within 72 hours of the event. The written notification must, at a minimum, specify what happened, what response action is being taken and/or is planned, and any potential impacts on public health and/or the environment; and

c. Procedures must be implemented if unforeseen events prevent corrective measure construction. For example, in certain circumstances both a primary and secondary corrective measure may be selected for the Facility. If the primary corrective measure could not be constructed, then the secondary would be implemented. This section would thus specify that if the primary corrective measure could not be constructed, then design plans would be developed for the secondary measure.

8. Construction safety procedures should be specified in a separate Health and Safety Plan.

9. Data Management and Documentation Requirements

Describe how analytical data and results will be evaluated, documented and managed, including development of an analytical database. State the criteria that will be used by the project team to review and determine the quality of data.

The Construction Workplan shall specify that the Owner/Operator or Respondent collect and maintain the following information:

a. Progress Report Information

- Work Accomplishments (e.g., hours of operation, excavated volumes, nature and volume of wastes generated, area of cap completed, length of trench completed, etc.).

- Record of significant activities (e.g., sampling events, inspections, problems encountered, action taken to rectify problems, etc.).

b. Monitoring and laboratory data;

c. Records of construction costs; and
d. Personnel, maintenance and inspection records.

This data and information should be used to prepare progress reports and the Construction Completion Report.

10. Cost Estimate/Financial Assurance

If financial assurance for corrective measure construction and operation is required by an enforcement order, facility permit, or through use of Department discretion, the Construction Workplan must include a cost estimate, specify which financial mechanism will be used and when the mechanism will be established. The cost estimate shall include both construction and operation and maintenance costs. An initial cost estimate shall be included in the draft Construction Workplan and a final cost estimate shall be included in the final Construction Workplan. The financial assurance mechanism may include a performance or surety bond, a trust fund, a letter of credit, financial test and corporate guarantee equivalent to that in 40 CFR 265.143 or any other mechanism acceptable to the Department.

Financial assurance mechanisms are used to assure the Department that the Owner/Operator or Respondent has adequate financial resources to construct and operate the corrective measure.

F. Construction Completion Report

The Owner/Operator or Respondent shall prepare a Construction Completion (CC) Report which documents how the completed project is consistent with the Final Plans and Specifications. A CC Report shall be submitted to the Department when the construction and any operational tests have been completed. The CC Report shall, at a minimum, include the following elements:

1. Purpose;

2. Synopsis of the corrective measure, design criteria, and certification that the corrective measure was constructed in accordance with the Final Plans and Specifications;

3. Explanation and description of any modifications to the Final Plans and Specifications and why these were necessary for the project;

4. Results of any operational testing and/or monitoring, indicating how initial operation of the corrective measure compares to the design criteria;

5. Summary of significant activities that occurred during construction. Include a discussion of problems encountered and how they were addressed;

6. Summary of any inspection findings (include copies of key inspection documents in appendices);

7. As built drawings; and

8. A schedule indicating when any treatment systems will begin full scale operations.

G. Corrective Measure Completion Report

The Owner/Operator or Respondent shall prepare a Corrective Measure Completion (CMC) Report when the Owner/Operator or Respondent believes that the corrective measure completion criteria have been satisfied. The purpose of the CMC Report is to fully document how the corrective measure completion criteria have been satisfied and to justify why the corrective measure and/or monitoring may cease. The CMC Report shall, at a minimum, include the following elements:

1. Purpose;

2. Synopsis of the corrective measure;

3. Corrective Measure Completion Criteria

   Describe the process and criteria for determining when corrective measures, maintenance and monitoring may cease. Corrective measure completion criteria were given in the final Operation and Maintenance (O&M) Plan;

4. Demonstration that the completion criteria have been met. Include results of testing and/or monitoring, indicating how operation of the corrective measure compares to the completion criteria;

5. Summary of work accomplishments (e.g., performance levels achieved, total hours of treatment operation, total treated and/or excavated volumes, nature and volume of wastes generated, etc.);

6. Summary of significant activities that occurred during operations. Include a discussion of problems encountered and how they were addressed;

7. Summary of inspection findings (include copies of key inspection documents in appendices); and

8. Summary of total operation and maintenance costs.

H. Health and Safety Plan

The Owner/Operator or Respondent must prepare a Health and Safety Plan for construction, operation and maintenance of the corrective measure. The Health and Safety Plan will not be approved by the Department. The Health and Safety Plan must, at a minimum, include the following elements:

1. Objectives

   Describe the goals and objectives of the Health and Safety Plan (must apply to on-site personnel and visitors). The Health and Safety Plan must be consistent with the Facility Contingency Plan, Occupational Safety and Health Administration (OSHA) Regulations, NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985), all state and local regulations and other Department guidance as provided.

2. Hazard Assessment

   List and describe the potentially hazardous substances that could be encountered by field personnel during construction and/or operation and maintenance activities. Discuss the following:

   - Inhalation Hazards
   - Dermal Exposure
   - Ingestion Hazards
   - Physical Hazards
   - Overall Hazard Rating

   Include a table that, at a minimum, lists: known ontaminants, highest observed concentration, media, symptoms/effects of acute exposure.

3. Personal Protection/Monitoring Equipment

   For each operational task, describe personal protection levels and identify all monitoring equipment. Describe any action levels and corresponding response actions (i.e., when will levels of safety be upgraded). Describe decontamination procedures and areas.

4. Site Organization and Emergency Contacts

   List and identify all contacts (include phone numbers). Identify the nearest hospital and provide a regional map showing the shortest route from the facility to the

hospital. Describe site emergency procedures and any site safety organizations. Include evacuation procedures for neighbors (where applicable).

Include a Facility Map showing emergency station locations (first aid, eye wash areas, etc.).

I. Submittal Summary

The following list provides a summary of when and how key documents should be submitted to the Department.

1. The submittal schedule for the documents listed below should be included in an enforcement order, permit or otherwise specified by the Department.

   - Conceptual Design

2. The submittal schedule for the documents listed below must be specified in the Conceptual Design. The groupings reflect which documents should be submitted together.

   - Draft Plans and Specifications
   - Draft Operation and Maintenance Plan
   - Draft Construction Workplan
   - Final Plans and Specifications
   - Final Operation and Maintenance Plan
   - Final Construction Workplan
   - Health and Safety Plan

3. The submittal schedule for the document listed below must be specified in the Final Construction Workplan.

   - Construction Completion Report

4. The submittal schedule for the document listed below is based on when the Owner/Operator or Respondent believes the completion criteria have been satisfied.

   - Corrective Measure Completion Report

5. The submittal schedule for Progress Reports shall be bimonthly unless otherwise specified by the Department.

ATTACHMENT G

SCOPE OF WORK FOR PROGRESS REPORTS

The Owner/Operator or Respondent shall provide the Department with signed bi-monthly progress reports during corrective measure design, construction, operation and maintenance. The Department may adjust the frequency of progress reporting to address site specific needs. For example, more frequent progress reports may be needed to track critical activities such as corrective measure construction and start-up. Progress reports must, at a minimum, include the following elements:

1. A description of significant activities and work completed during the reporting period;

2. Summary of system effectiveness. Provide a comparison of system operation to predicted performance levels (applicable only during operation of the corrective measure);

3. Summaries of all findings (including any inspection results);

4. Summaries of all contacts with representatives of the local community, public interest groups or State government during the reporting period;

5. Summaries of all problems or potential problems encountered during the reporting period;

6. Actions being taken and/or planned to rectify problems;

7. Changes in personnel during the reporting period;

8. Projected work for the next reporting period; and

9. If requested by the Department, the results of any sampling tests and/or other data generated during the reporting period.

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of: Facility: 2100 East Orangethorpe Ave. Fullerton, CA 92831 CAD 008 325 110 Owner: Mr. Eddie Fisher, President La Barron Investments 2020 East Orangethorpe Ave. Fullerton, CA 92831 Respondent.	Docket HWCA PT-01/02-009 Notice to Respondent

TO THE ABOVE RESPONDENT:

An Enforcement Order (Order) is attached to this statement and is hereby served upon you. The Order has been filed by the Department of Toxic Substances Control (Department).

UNLESS A WRITTEN REQUEST FOR A HEARING SIGNED BY YOU OR ON YOUR BEHALF IS DELIVERED TO THE DEPARTMENT OR POSTMARKED WITHIN TWENTY DAYS AFTER THE DATE OF THE COVER LETTER YOU RECEIVED WITH YOUR COPY OF THE ORDER, YOU WILL BE DEEMED TO HAVE WAIVED YOUR RIGHT TO A HEARING IN THIS MATTER. IF YOU DO NOT FILE A TIMELY HEARING REQUEST, THE ENFORCEMENT ORDER BECOMES FINAL AUTOMATICALLY.

The request for a hearing may be made by delivering or mailing one copy of the enclosed form entitled "Notice of Defense" or by delivering or mailing a Notice of Defense as provided in section 11506 of the Government Code to:

Chief Counsel
Office of Legal Counsel
Department of Toxic Substances Control
1001 I Street, 23rd floor,
P. O. Box 806
Sacramento, California 95812-0806

The enclosed Notice of Defense, if signed and filed with the Department, is deemed a specific denial of all parts of the Order, but you will not be permitted to raise any objection to the form of the Order unless you file a further Notice of Defense as provided in section 11506 of the Government Code within fifteen days after service of the Order upon you.

If you file a Notice of Defense within the time permitted, a hearing on the allegations made in the Order will be conducted by the Office of Administrative Hearings of the Department of General Services in accordance with the procedures specified in Health and Safety Code section 25187 and Government Code sections 11507 et seq.

The hearing may be postponed for good cause. If you have good cause, you must notify the Department within ten working days after you discover the good cause. Failure to notify the Department within ten days will deprive you of a postponement.

Copies of sections 11507.5, 11507.6, and 11507.7 of the Government Code are attached. If you desire the names and

addresses of witnesses or an opportunity to inspect and copy items in possession, custody, or control of the Department, you may contact:

Chief Counsel
Office of Legal Counsel
Department of Toxic Substances Control
1001 I Street, 23rd Floor
P. O. Box 806
Sacramento, California 95812-0806

Whether or not you have a hearing, you may confer informally with the Department to discuss the alleged facts, determinations, corrective actions and penalty. An informal conference does not, however, postpone the twenty-day period you have to request a hearing on the Order. An informal conference may be pursued simultaneously with the hearing process.

You may but are not required to be represented by counsel at any or all stages of these proceedings.

Section 11507.5. Exclusivity of discovery provisions

The provisions of Section 11507.6 provide the exclusive right to and method of discovery as to any proceeding governed by this chapter.

Section 11507.6. Request for discovery

After initiation of a proceeding in which a respondent or other party is entitled to a hearing on the merits, a party, upon written request made to another party, prior to the hearing and within 30 days after service by the agency of the initial pleading or within 15 days after the service of an additional pleading, is entitled to (1) obtain the names and addresses of witnesses to the extent known to the other party, including, but not limited to, those intended to be called to testify at the hearing, and (2) inspect and make a copy of any of the following in the possession or custody or under the control of the other party:

(a) A statement of a person, other than the respondent, named in the initial administrative pleading, or in any additional pleading, when it is claimed that the act or omission of the respondent as to this person is the basis for the administrative proceeding;

(b) A statement pertaining to the subject matter of the proceeding made by any party to another party or person;

(c) Statements of witnesses then proposed to be called by the party and of other persons having personal knowledge of the acts, omissions or events which are the basis for the proceeding, not included in (a) or (b) above;

(d) All writings, including, but not limited to, reports of mental, physical and blood examinations and things which the party then proposes to offer in evidence;

(e) Any other writing or thing which is relevant and which would be admissible in evidence;

(f) Investigative reports made by or on behalf of the agency or other party pertaining to the subject matter of the proceeding, to the extent that these reports (1) contain the names and addresses of witnesses or of persons having personal knowledge of the acts, omissions or events which are the basis for the proceeding, or (2) reflect matters perceived by the investigator in the course of his or her investigation, or (3) contain or include by attachment any statement or writing described in (a) to (e), inclusive, or summary thereof.

For the purpose of this section, "statements" include written statements by the person signed or otherwise authenticated by him or her, stenographic, mechanical, electrical or other recordings, or transcripts thereof, of oral statements by the person, and written reports or summaries of these oral statements.

Nothing in this section shall authorize the inspection or copying of any writing or thing which is privileged from disclosure by law or otherwise made confidential or protected as the attorney's work product.

Section 11507.7. Motion to compel discovery

(a) Any party claiming the party's request for discovery pursuant to Section 11507.6 has not been complied with may serve and file with the administrative law judge a motion to compel discovery, naming as respondent the party refusing or failing to comply with Section 11507.6. The motion shall state facts showing the respondent party failed or refused to comply with Section 11507.6, a description of the matters sought to be discovered, the reason or reasons why the matter is discoverable under that section, that a reasonable and good faith attempt to contact the respondent for an informal resolution of the issue has been made,and the ground or grounds of respondent's refusal so far as known to the moving party.

(b) The motion shall be served upon respondent party and filed within 15 days after the respondent party first evidenced failure or refusal to comply with Section 11507.6 or within 30 days after request was made and the party has failed to reply to the request, or within another time provided by stipulation, whichever period is longer.

(c) The hearing on the motion to compel discovery shall be held within 15 days after the motion is made, or a later time that the administrative law judge may on the judge's own motion for good cause determine. The respondent party shall have the right to serve and file a written answer or other response to the motion before or at the time of the hearing.

(d) Where the matter sought to be discovered is under the custody or control of the respondent party and the respondent party asserts that the matter is not a discoverable matter under the provisions of Section 11507.6, or is privileged against disclosure under those provisions, the administrative law judge may order lodged with it matters provided in subdivision (b) of Section 915 of the Evidence Code and examine the matters in accordance with its provisions.

(e) The administrative law judge shall decide the case on the matters examined in camera, the papers filed by the

parties, and such oral argument and additional evidence as the administrative law judge may allow.

(f) Unless otherwise stipulated by the parties, the administrative law judge shall no later than 15 days after the hearing make its order denying or granting the motion. The order shall be in writing setting forth the matters the moving party is entitled to discover under Section 11507.6. A copy of the order shall forthwith be served by mail by the administrative law judge upon the parties. Where the order grants the motion in whole or in part, the order shall not become effective until 10 days after the date the order is served. Where the order denies relief to the moving party, the order shall be effective on the date it is served.

PROOF OF SERVICE

1. I served the

a. /X/ Enforcement Order Docket No. HWCA PT-01/02-009

/X/ Statement to Respondent

/X/ 2 Blank Notice of Defense Forms

/X/ Other (specify): Statements of Work and Transmittal Letter

b. On Respondent (Name): Mr. Eddie Fisher, President
La Barron Investments
2020 East Orangethorpe Ave.
Fullerton, CA 92831

c. By serving: /X/ Respondent

/ / Other (Name and Title or relationship to Respondent): _____

_____

2. a. / / By personally delivering copies to (address) _____

_____

_____

at (time) _____ on (date) _____.

b. /X/ By mailing copies by first-class certified mail, Certified Mail Receipt No. 70001670000727295832 return receipt requested, in a sealed envelope addressed to:

Mr. Eddie Fisher, President
La Barron Investments
2020 East Orangethorpe Ave.
Fullerton, CA 92831

3. My name, business address, and telephone number are:

Leona Winner
8800 Cal Center Drive
Sacramento, CA 95826
(916) 255-6679

I declare under penalty of perjury that the foregoing is true and correct and that this declaration is executed on (date) 10/10/02 at (place) Sacramento, California.

Leona L Winner
(Signature)

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of: Facility: 2100 East Orangethorpe Ave. Fullerton, CA 92831 CAD 008 325 110 Owner: Mr. Eddie Fisher, President La Barron Investments 2020 East Orangethorpe Ave. Fullerton, CA 92831 Respondent.	Docket HWCA PT-01/02-009 NOTICE OF DEFENSE Health and Safety Code Section 25187(d)

I, the undersigned Respondent, acknowledge receipt of a copy of the Enforcement Order, Statement to Respondent, Government Code sections 11507.5, 11507.6, and 11507.7, and two copies of a Notice of Defense.

I request a hearing to permit me to present my defense to the allegations contained in the Enforcement Order.

Dated: _____

_____
(Signature of Respondent)

Mr. Eddie Fisher, President
La Barron Investments
2020 East Orangethorpe Ave.
Fullerton, CA 92831
(714) 680-3812 ext 5

(Inspector: Leona Winner)

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of:

Facility:
2100 East Orangethorpe Ave.
Fullerton, CA 92831
CAD 008 325 110

Owner:
Mr. Eddie Fisher, President
La Barron Investments
2020 East Orangethorpe Ave.
Fullerton, CA 92831

Respondent.

Docket HWCA PT-01/02-009

NOTICE OF DEFENSE

Health and Safety Code
Section 25187(d)

I, the undersigned Respondent, acknowledge receipt of a copy of the Enforcement Order, Statement to Respondent, Government Code sections 11507.5, 11507.6, and 11507.7, and two copies of a Notice of Defense.

I request a hearing to permit me to present my defense to the allegations contained in the Enforcement Order.

Dated: _____

_____
(Signature of Respondent)

Mr. Eddie Fisher, President
La Barron Investments
2020 East Orangethorpe Ave.
Fullerton, CA 92831
(714) 680-3812 ext 5

(Inspector: Leona Winner)